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skilled Texaco Lubrication Engineering Service.

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Lubrication Engineering Service

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PURCHASING

The National Magazine of Industrial Purchasing

STUART F. HEINRITZEditor

VOL. 34, No. 5

MAY, 1953

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MAY, 1953

5

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for trouble-free service

GRINNELL

STAINLESS STEEL WELDING FITTINGS and FLANGES



To help combat mounting costs in the installation and maintenance of piping systems where corrosive or certain other service conditions are involved, Grinnell offers a comprehensive range of welding fittings and flanges in stainless steel.

- To prevent corrosive attack.
- To obtain adequate impact resistance at low temperatures and sufficient creep strength at high temperatures.
- To provide sanitary conditions.
- To avoid contaminating the product.

Grinnell welding fittings and flanges are available in types 304, 347 and 316. These are in the chromium-nickel grades known as "18-8". The corrosion resistant properties of stainless steels are primarily due to the chromium content which ranges from 17% to 20%. The addition of nickel in ranges from 7% to 14% improves the corrosion resistance as well as the properties at elevated temperatures. A molybdenum addition of 2% to 3%, as found in type 316, increases the resistance to sulphurous and phosphoric acids, brine and hypochlorite solutions, and improves the general resistance to other corrosive liquids, as well as improving the physical properties at elevated temperatures. A columbium addition of approximately 0.4% to 1.0%, as found in type 347, creates non-susceptibility to carbide precipitation which can cause intergranular corrosion.

In addition to stainless steel, Grinnell offers welding fittings and flanges in carbon steel, nickel, Inconel, Monel, aluminum and brass.

Write for new booklet giving complete data on Grinnell stainless steel welding fittings and flanges. No obligation.



stainless steel welding fittings Types 304, 347, 316

DESCRIPTION	SCHEDULE†	PIPE SIZE, IN.‡
90° Long Radius Elbow	5s, 10s, 40s, 80s	½ to 12
45° Long Radius Elbow		
180° Long Radius Return		
Straight Tee	5s, 10s, 40s, 80s	¾ to 12
Reducing Tee		
Cross		
(Straight and Reducing)	5s, 10s, 40s, 80s	1¼ to 12
Concentric Reducer	5s, 10s, 40s, 80s	¾ to 12
Eccentric Reducer		
Lateral		
(Straight or Reducing)	5s, 10s, 40s, 80s	1 to 12
Cap	5s, 10s, 40s, 80s	½ to 12
Lap Joint Stub End-Long	10s, 40s, 80s	½ to 12
Lap Joint Stub End-Short	5s, 10s, 40s,	½ to 12

† 5s is Featherweight, 10s Lightweight, 40s Standard, 80s Extra Strong.
‡ Larger sizes available on special order.

stainless steel flanges

150 lb. and 300 lb. Steel Flange
Standard (Higher series available
on application).

150 lb. Corrosion Resistant
Standard. (For use with schedule
10s and 5s pipe. Rated at 150 psi
at 500°F, 225 psi at 150°F, when
used with full-faced gaskets).

DESCRIPTION	PIPE SIZE, IN.	DESCRIPTION	PIPE SIZE, IN.
Welding Neck	½ to 24	Buttwelding	½ to 12
Slip-on		Slip-on	
Lap Joint		Blind	
Threaded			
Socket Type			
Blind			

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PURCHASING PREVIEWS

A WASHINGTON REPORT FOR PURCHASING AGENTS

May 1, 1953

NO ARTIFICIAL STIMULANTS

Administration appraisal of economic outlook is that the level of the economy is so high that the artificial stimulants introduced by the Democratic regimes during the last 20 years can be withdrawn—temporarily at least.

Basic stimulant to the economy is Government spending by the military—and military procurement is currently at such a high level that employment is at an all-time record, with earnings similarly high. This rate of military spending will carry through until the end of this year, and then taper off.

WHERE DO WE CUT BACK THE SPENDING?

The high rate of military spending was initiated under the Democratic administration, but the Democrats either neglected—or just didn't bother—to turn off the various faucets of Government spending of a non-defense nature.

This neglect led to a condition where defense spending was at a high level simultaneous with a consistent increase in non-defense Government activity. Example was the large Government commitments in airport construction and expansion.

There is no question about the long-term requirements for airport construction—even though some question might arise as to how far the Federal Government should commit itself to underwrite such expansion.

In any case, the Democrats continued the civil airport program while expanding military aviation. Result was chaos. Part of the tremendous scarcity of materials during the last two years has been traceable to the simultaneous expansion of civilian and military projects.

A face saving effort was made to classify the civilian projects as being in support of the military, but it was generally understood that the whole effort was directed toward attaining full employment and a high level of business.

In retrospect it can be said that the technique was spectacular. There was a high level of economic activity, which was far higher than was anticipated—so much so that materials became scarce, and controls became necessary over both materials and prices.

HIGH LEVEL ECONOMY FOR REST OF YEAR

Now comes the new Administration, and views the immediate future and looks into what may develop later. As to the immediate future, it is apparent that both industry and employment will carry forward this year at high levels. A new record high in employment levels is anticipated for this June, when indus-

trial, agricultural and construction requirements all reach their peak levels, the latter two being at seasonal highs.

From the industrial viewpoint, the underlying prop for the employment requirements will be the large expansion in defense production.

As viewed by the new Administration, this is no time to pump in additional pick and shovel employment by underwriting a large airport program—or by over-stimulating a segment of business that is already operating at capacity. The momentum of industry will certainly carry forward without additional props.

WHAT HAPPENS WHEN DEFENSE OUTPUT SLACKENS?

At the same time, considerable thought is being given to what may happen when defense spending tapers off.

Opinion is divided on whether the Soviets mean what they say in their current peace offensive. There is a healthy skepticism of the Soviet intentions and motives—but the Russians

so dominate the diplomatic game that even if we do not trust their peace proposals, we must at least take them into account—remembering that a facet of the Soviet character is a quick switch from aggression to a guise of complete and pacified innocence.

Significance here is that the current military production schedule calls for a slackening off in the rate of output next year. The only likelihood of reversal is if the Soviets throw down the gauntlet and chance a major war.



Six bucks to repair a six-buck item?

Too much? Maybe so, but it's happening all the time. At today's maintenance rates of \$3 to \$4 an hour, regrinding a valve seat isn't a small job any more. Nor is repacking a valve, or installing a new one. Even replacing an ordinary pipe fitting isn't the same job it used to be.

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▲PURCHASING PREVIEWS

continued

With the Russians disposed to play shy of such madness, the most reasonable outlook would be for the rate of military production to slacken off some time this year, and to turn down next year. This process could even be accelerated if the Soviets give realistic assurance of pacific intentions.

However, assuming no major change, military production will slacken next year. The rate of draft calls will fall off even further, and industry, which has been geared up to the output of an unprecedented tonnage of steel and aluminum, will be out actively looking for customers.

GOVERNMENT AIDS ON THE WAY OUT

If there is any justification at all for Federal expenditures for airports and other similar grants, the time for such aids would be in the slackening off period—not when the economy is swollen and taut with military spending.

At this point it is difficult to see how the Republican Administration will act in the event that the economy hesitates—whether the multiplicity of devices brought into play by the Democrats will be polished up and used again.

For the present, there is no doubt. At this stage of the economy, the one unmistakable conclusion is that the Administration will forego such artificial stimulants.

The Department of Commerce has called a halt on the Federal Government's subsidy for the construction of new airports. The Civil Aeronautics Administration has been ordered to suspend its airport subsidy program for a year and make a study of the nation's requirements for airports.

Presumably this could lead to the development of an even larger program which could be launched a year or 18 months hence when some stimulus to construction employment is needed.

Or it could be a complete point of departure—an approach under which a project would not be considered feasible unless it could be justified on a practical dollars-and-cents basis.

These projects are likely to be saved for a rainy day—not totally abandoned.

Abolition of the Reconstruction Finance Corporation is equally significant—not for the reason that RFC is currently an important factor in the nation's economy, but because the Government corporation pursued policies which became the hallmark of the "New Deal" program.

During the 1930's, this approach had considerable in its favor. Private financial interests had been permeated with a degree of caution which tintured their judgment. For the last decade and a half, RFC has been in a state of liquidation, and venture capital has been even more aggressive than Government.

NEW TEAM CONTINUES RIGHT-OF-CENTER

As to what is still ahead, the character of the Eisenhower Administration remains essentially one of holding to the middle of the road—slightly to the right of center.

This means that in agriculture, the Administration will continue to use price supports to keep agricultural prices from falling below the levels at which farmers can get a reasonable return for their investments and efforts. At the same time, the effort will be to avoid the policy of the past administration of insuring profits to all growers of agricultural products, regardless of whether a market exists for their products. This policy resulted in a surplus of over \$1 billion worth of produce.

If this same policy is followed with respect to industrial products, a more conservative approach is likely toward the accumulation of stockpiles of industrial materials. Also there is likely to be a more conservative approach toward expansion of industrial production facilities which have only a limited implication in the nation's defense program.

But the real test of the Administration will come when its policies begin to cut back on some of the pork barrel legislation which members of Congress love for proving to the folks back home their effectiveness in raiding the Federal treasury. How will Congress take to economy and cutbacks?

These are some of the tests that are still ahead—some of the questions that are still unanswered.

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Life-Line motor

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Catalog Files



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Thinking of air conditioning? Simple technique figures costs, amortization etc., on short form.

General Electric Company

2. BAG HANDLING

"Logistics of Bags" is title of 8-page booklet on industrial truck methods of handling bags.

The Elwell-Parker Electric Co.

3. BRUSHES

400 industrial brushes of all types and sizes are described in illustrated catalog.

Torrington Brush Works

4. BUILDINGS

Expanding? 20-page brochure gives details on standardized steel-frame structures.

Luria Engineering Co.

5. CARBIDE

Catalog shows complete line of carbide blanks, tools, toolholder inserts. Has technical data.

Vascoley-Ramet Corporation

6. CARBIDE-TIPPED CUTTING TOOLS

Comprehensive catalog covers carbide-tipped circular saw blades and other cutting tools.

DeLuxe Saw & Tool Company

7. CAR SPOTTERS AND PULLERS

Book No. 2092 describes a complete line of equipment for moving railroad cars, and heavy loads.

Link-Belt Company

8. CHEMICALS

Seven classes of Atlas industrial chemicals—sorbitol, resins, acids, etc. detailed in catalog.

Atlas Powder Co.

9. CLUTCHES

Data on over-running, indexing and backstopping clutches with full complement of sprags.

Formsprag Company

10. CONTROLLERS

Catalog 1530 has 56 fact-filled pages describing Electronik control instruments.

Brown Instruments Division

11. FANS

Summer is coming. Theme of Catalog 3FN-0301 is "a fan for every cooling problem."

Westinghouse Electric Co.

12. FLUORESCENT LAMP BALLASTS

Booklet GEA-4950E gives complete information on fluorescent lamp ballasts for all uses.

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May 1953

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Company

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13. FRAMING

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Flexa Steel Products, Inc.

14. GEAR COUPLING

Distinctive features of new flexible gear couplings are detailed in 16-page catalog.

Sier-Bath Gear & Pump Co.

15. HYDRAULIC CYLINDERS

Eleven different models of space-saving high-pressure cylinders covered in catalog.

S-P Manufacturing Corp.

16. MARKING TOOLS

Marking stamps and dies for every industrial application are covered in 32-page catalog.

The Parker Stamp Works, Inc.

17. METAL FORMING

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Eastern Tool & Mfg. Co.

18. MILLING MACHINES

28-page illustrated catalog details line of new automatic milling machines.

The Cincinnati Milling Machine Co.

19. MOTORS-GENERATORS

Reference booklet is designed to aid in the selection of motive power for most industrial uses.

Allis-Chalmers Manufacturing Co.

20. MOTORS

Complete line of drip-proof induction motors, from 1/3 to 150 hp, described in brochure.

Lima Electric Motor Co.

21. PACKAGING PAPER

Cindus X-Crepe, creped and cross-creped kraft product, shown solving many packaging problems.

Cincinnati Industries, Inc.

22. POLYETHYLENE PLASTIC

New information about the properties, applications and methods of fabricating polyethylene plastic.

Bakelite Company

**Check Coupon on Page 19
to Obtain These Catalogs**

23. POLYESTER RESINS

24-page bulletin contains detailed information on industrial applications for polyester resins.

General Electric Chemical Div.

24. ROLLER BEARINGS

Bulletin 200-C covers self-aligning spherical roller bearings. Complete data included.

The Torrington Company

25. SCREW CONVEYORS

Comprehensive information on screw conveyors and screw feeders offered in 92-page Book 2289.

Link-Belt Company

26. SHEAVES

Specification Guide No. 83 gives dimensions and weights of QD V-belt sheaves and hubs.

Fort Worth Steel & Machinery Co.

27. SOLENOID VALVES

Catalog No. 24 gives full details on a comprehensive line of solenoid valves.

Automatic Switch Co.

28. STEAM ACCUMULATOR

How to balance steam supply and demand with a steam accumulator is told in bulletin.

Foster Wheeler Corporation

29. STEAM SPECIALTIES

Line of steam, gas, air, oil and water regulating equipment is covered in new catalog.

O. C. Keckley Company

30. WELDING

Full information on resistance welding products is contained in Bulletin RW-1a.

Ampco Metal, Inc.

31. WOVEN WIRE CLOTH

Comprehensive catalog, 132 pages, is full of information on woven wire cloth.

The Cambridge Wire Cloth Company

HERE'S PROOF - IT PAYS TO CALL IN THE G. T. M.

These two conveyor belts — handling cartons between rail platform and bottle shop, were real "problem children." The horizontal belt stretched badly, causing shutdowns for take-up adjustment or belt re-fastening as often as three times a month. Cartons riding up the slope conveyor would slip, slide back and cause jams at the foot of the climb, damaging the boxes.

So the plant operator called in the G.T.M.—Goodyear Technical Man—got his recommendations to end the time-consuming and costly problems. He studied the drive—recommended re-belted both conveyors. The horizontal belt is now a Goodyear Stacker

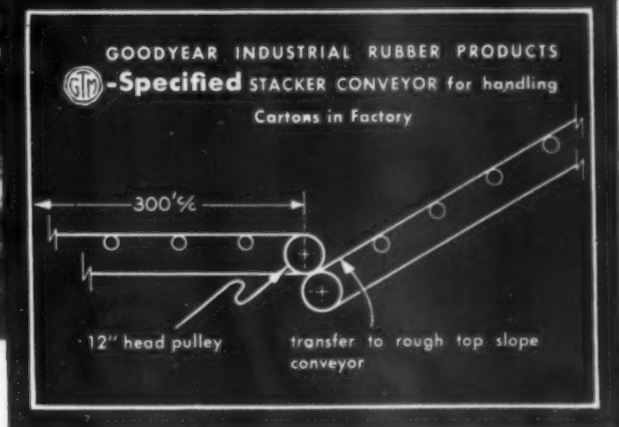
Conveyor — the slope is belted with a Goodyear Rough Top. The troubles? Ended! The horizontal conveyor has served over two years without a take-up, without any stretch. The rough top conveyor ended back-slip completely.

Wherever a conveyor belt problem is concerned — redesign of an existing unit or specification of a completely new unit — it's only common sense to turn to the man who knows conveyors best. You can reach him by calling in the G.T.M. through your Goodyear Distributor or by writing:

Goodyear, Industrial Products Division, Akron 16, Ohio.



YOUR GOODYEAR DISTRIBUTOR can quickly supply you with *Hose, Flat Belts, V-Belts, Packing, Tank Lining, Rubber-Covered Rolls.* Look for him in the yellow pages of your Telephone Directory under "Rubber Products" or "Rubber Goods."



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NEWS OF YOUR Suppliers



Lester Brion, for many years president of **Peter A. Frasse & Company, Inc.**, New York City, has been elected to the newly created office of chairman of the board. Theodore W. Hager, formerly executive vice president, succeeds Mr. Brion as president. Russell B. Barnett and Walter R. Bankwitz continue as vice president and secretary-treasurer.



Fabian Bachrach
Theodore W. Hager

merly executive vice president, succeeds Mr. Brion as president. Russell B. Barnett and Walter R. Bankwitz continue as vice president and secretary-treasurer.

General Electric, Bridgeport, Conn., has announced two organization changes in its Construction Materials Division. Effective April 1, the Wiring Device Department at Bridgeport and the company's Monowatt Department at Providence, R. I., have been consolidated into a new department to be known as the G-E Wiring Device Department, with headquarters at Providence. Abe F. Warren has been named general manager and Arville W. Gilmore is assistant general manager of the new department. Effective April 2, Frederick C. Dazley, former manager of marketing for the Wiring Device Department, was named general manager of the newly-formed Accessory Equipment Department within the division. This department will have its headquarters at Bridgeport.

Pennsylvania Salt Manufacturing Company, Philadelphia, Pa., has appointed Albert H. Clem general sales manager to succeed Russell S. Roeller, who died recently. Mr. Clem formerly was assistant general sales manager.

Hyster Company, Portland, Ore., has appointed Richard Kinder national account executive. Mr. Kinder, who joined the Hyster Company in 1949 as a buyer in the purchasing department, will make his headquarters at the company's Chicago, Ill. office.

Norton Company, Worcester, Mass., has appointed William C. Davidson abrasive engineer for the West Virginia territory. Mr. Davidson formerly was instructor of human relations in Norton's sales training department. More recently he has been a grinding engineer in the precision grinding section of the company's sales engineering department.

American Brake Shoe Company, New York City, has announced three new appointments in its Brake Shoe and Castings Division. John F. Ducey, Jr.



Daniel J. Wagner

has been named vice president, George E. Anne becomes assistant vice president, and Daniel J. Wagner is district sales manager in the Chicago, Ill. area. Mr. Ducey will be located in the San Francisco, Calif., office, and Mr. Anne is located at Philadelphia, Pa.

J. W. Riddell has been appointed manager of the Reading, Pa., branch of the **Graybar Electric Company**, New York City, succeeding T. J. Hopkins, who died recently. Mr. Riddell has been with the company since 1945. H. E. Orr has been appointed manager of the Amarillo, Texas, branch of the Graybar Electric Company. Mr. Orr joined the company in 1948.

Brown Company, Boston, Mass., has promoted W. T. LaRose to manager of the newly-formed Towel and Tissue Sales Division. Mr. LaRose has been associated with Brown Company and



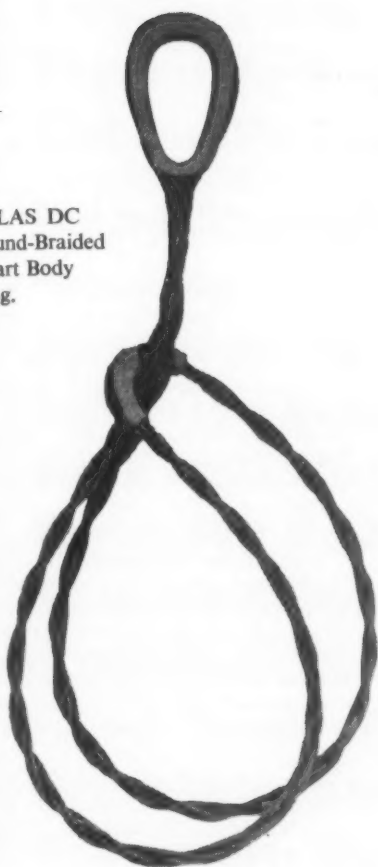
W. T. LaRose

the Nibroc Towel Division for more than 25 years. N. O. Robinson, formerly eastern central representative of the Towel Division, has been promoted to Eastern Regional Manager, and J. E. Mullaney, Jr., formerly midwest representative of the Towel Division, has been promoted to Western Regional Manager.

Duanne R. Lamiman has been named district sales manager of the New York office of United States Gauge, Division of **American Machine and Metals, Inc.**, Sellersville, Pa. The New York territory comprises New York City, eastern New York State, New England and northern New Jersey. Headquarters are in the Woolworth Building, New York City.

Miller Motor Company, Melrose Park, Ill., has announced several changes and additions to its sales staff. H. Bruce Rasmussen has been named sales manager in charge of Miller's coast-to-coast sales organization. He previously was with Baker Chemical Company for 19 years. Jack Frink and John Vaas have been added to the Chicago sales staff and Stephen Stiles has been added to the Detroit staff. Roger Lawson is now working in the Cleveland-Akron-Youngstown area.

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Round-Braided
8-part Body
Sling.



*Complete line of slings to
fit every need*

Three types of body are available: Atlas Round-Braided, Drew Flat-Braided, Monarch Single-Part. All are made to order in any size for any job.

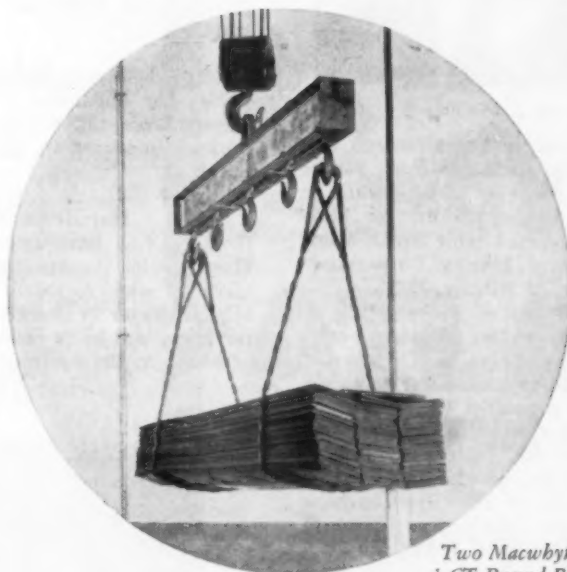
Our engineers will gladly study your sling needs and make recommendations.

Sling life goes up with "balanced braiding"

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There's longer life in an Atlas Braided Sling because of Macwhyte's *balanced* method of construction: 1. Ropes are spliced endless before braiding. 2. Right lay ropes balance left lay ropes. 3. All ropes follow uniform spiral paths, assuring balanced tension throughout the sling body.

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Two Macwhyte Atlas type
1-CT Round-Braided Slings
with 6-ton lifting beam
handling plate stock.

MACWHYTE SLINGS



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1029-D

Bridgeport Brass Company, Bridgeport, Conn., is moving its New England warehouse facilities at Providence, R. I., to a new and larger location at 177 Georgia Avenue in that city. The new warehouse is under the direction of N. Newbury, district sales manager.

Udylite Corporation, Detroit, Mich., has appointed Louis J. Minbiolo assistant sales manager effective April 1. Mr. Minbiolo joined Udylite in 1946 as



Louis J. Minbiolo

a sales engineer in the Michigan territory. He was graduated from Wayne University College of Engineering in 1940. Prior to joining Udylite, Mr. Minbiolo was associated with Buick Division of General Motors Corporation. He is a native of Albany, N. Y.

Carl H. Pottenger, assistant sales manager of the Chemical Division of **Koppers Company, Inc.**, Pittsburgh, Pa., has been promoted to the position of assistant vice president and division sales manager. Mr. Pottenger succeeds T. C. Keeling, Jr., who resigned to become president of the Hydrocarbons Division of the Mathieson Chemical Corporation, Baltimore, Md. J. W. Pool, Jr. has been appointed assistant sales manager of Koppers' Chemical Division.

Westinghouse Electric Corporation, Pittsburgh, Pa., has appointed J. P. Coughlin manager of its arc welding department. Mr. Coughlin joined Westinghouse in 1939. His most recent position was that of manager of field sales for the welding department, to which he was appointed in 1949.

Thompson & Company, Oakmont, Pa. has appointed R. B. Waters as sales engineer in Ohio. In his new capacity, with headquarters in Cleveland, he will sell and service the complete Thompson line.

Charles T. White, Jr., has been appointed Pittsburgh district manager, Industrial Products Division, **Goodyear Tire & Rubber Company**, Akron, Ohio. Mr. White joined Goodyear in 1947 and most recently held the position of senior staffman in Industrial Products sales in Akron.

Robert D. Winston has been appointed sales manager of the Commercial Products Division of the **Audio & Video Products Corporation**, New York City. Mr. Winston, who formerly was product sales engineer, will be primarily concerned with radio, TV, film, audio, recording and music markets.

Webster-Chicago Corporation, Chicago, Ill., has appointed Herbert A. Gumz executive vice president and Norman C. Owen vice president in charge of sales. Mr. Gumz has been vice president and acting general manager of Webcor since November 9, 1952. Mr. Owen was named general sales manager in April, 1952.

Sintering Machinery Corporation, Netcong, N. J., has announced that Harold E. Rowen, vice president and general manager of the corporation, has assumed the additional responsibility of directing the sales of the company's Metallurgical Division. He will maintain his headquarters at the company's home office and plant at Netcong.

Rinshed-Mason Company, Detroit, Mich., has appointed William B. Lutz sales representative responsible for industrial accounts in upper New York State.

Manco Manufacturing Company, Bradley, Ill., has appointed Jack W. Harvey sales manager for the firm. Mr. Harvey, who formerly was assistant sales manager in charge of the Chicago territory, will be in charge of the firm's activities in the hydraulic tool field.

Goodyear Aircraft Corporation, Akron, Ohio, has appointed Robert Lowry to coordinate all computer sales activities for the company. In his new assignment, Mr. Lowry is charged with responsibility for sales solicitation and administration of the company's GEDA computer line, and will be associated with the merchandise and contract control department, headed by J. C. Quirk. George Rodway replaces Mr. Lowry as contract administrator in the government projects sales department.

Barber-Greene Company, Aurora, Ill., has announced the appointment of A-C Supply Company, 2302 West Clybourn Street, Milwaukee 3, Wis., as its representative for the sale of portable and permanent belt conveyors to the industrial field. A-C will represent Barber-Greene in the entire peninsula of Michigan and some counties of Wisconsin.

General Box Company, Des Plaines, Ill., has announced the election of Emil Holzward as vice president in charge of production. Mr. Holzward joined the company in 1936 and after serving in various capacities, was named production manager in 1952, a post he has held since.

Samuel J. Mabry has been appointed Atlanta, Ga., district manager, Industrial Products Division of **Goodyear Tire & Rubber Company**, Akron, Ohio. Mr. Mabry, who has been an industrial products representative for Goodyear at Los Angeles, Calif., since 1948, succeeds John E. Ragan, deceased.



Left to right are: Calvin A. Burton, assistant to the president of the Lamson Corporation, Syracuse, N. Y.; Edward H. Woodberry, conveyor sales manager, and Gail D. Beaver, product sales manager.

Lamson Corporation, Syracuse, N. Y., has announced the appointment of Calvin A. Burton as assistant to the president. Mr. Burton, formerly conveyor sales manager, will be succeeded by

Edward H. Woodberry. Gail D. Beaver, until recently materials handling consultant, will become product sales manager and assume Mr. Woodberry's previous responsibilities.

- 1. Cold Heading**
- 2. Thread Rolling**
- 3. Automatic Tapping**
(commercial and precision)
- 4. Metal Stamping**
- 5. Bending**
- 6. Spot Welding**
- 7. Induction Soldering**
- 8. Automatic Drilling**
- 9. Threaded Rods**
- 10. Threaded Stud Bolts**
- 11. Automatic Screw Machines**
- 12. Hand Screw Machines**
- 13. Complete Assemblies**
- 14. Secondary Operations**

DESIGN • DEVELOPMENT MANUFACTURE

of

**PRECISION ELECTRICAL AND
MECHANICAL COMPONENTS**

We carry
complete stocks of both
STANDARD & SPECIAL SIZES
of

NUTS • BOLTS • SCREWS WASHERS

in Steel, Brass, Stainless and Aluminum

HEXAGON AND
SQUARE NUTS
SPANNER-HEAD
(TAMPER-PROOF)
SCREWS
MACHINE SCREWS
WOOD SCREWS

CAP AND SET SCREWS
SHEET METAL SCREWS
STOVE BOLTS
MACHINE CARRIAGE
& LAG BOLTS
FLAT WASHERS
LOCKWASHERS

14

reasons

why

ATLAS

SCREW

&

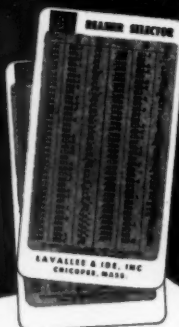
SPECIALTY CO.

**450 BROOME STREET
NEW YORK 13, N. Y.**

**can
do the
job**

THERE'S NO DOUBT ABOUT **L&I** REAMERS

It's easy to
choose the
right
reamer
with the
NEW
Reamer
Selector



It's easy to
get complete
specifications
of all L&I
Reamers
in the NEW
illustrated
catalog

It's easy to find
the exact price
to you in the
new illustrated
NET Price List



It's easy to get complete data on
reamer selection, specifications and
prices, too. Mail the coupon NOW!



*The
Reamer
Specialists*

**LAVALLEE & IDE, INC.
CHICOPEE, MASS.**

I'd like _____ Reamer Selectors
_____ New Catalogs _____ Net Price Lists.

Name _____ Pos _____

Company _____

Street _____

City _____ Zone _____

State _____ 2

F.O.B.



FILOSOFY OF BUYING

THE Air Materiel Command, with which so many eminent purchasing men have been associated over the past couple of years, has come up with a slogan which appears on the latest edition of the official letterhead—quite a radical departure from the conventional type of stationary customarily used by governmental agencies. The words are new, but the idea is basic and inherent in this conscientious procurement department—“More Air Force per Dollar.”

paying tribute to the significant role played by salesmen in the nation's system of competitive private enterprise. Outstanding event of the celebration was a big rally attended by more than 1,000 members of the sales fraternity. The speaker—Westinghouse Purchasing Agent Fred Esser.

COMPETITION is keen in Stockton, California. The School Board took bids on three food mixers, and awarded the contract at \$1,234.05. Next lowest bid was \$1,234.06.

WE have had occasion to call attention several times to the newly revised “Cost of Living” index as compiled by the Bureau of Labor Statistics. Among the criticisms that have been voiced regarding the make-up of the new index, is the contention of some labor union economists that taxes should have been included as a cost-of-living item, since the index is used in a number of companies in connection with setting wage rates, and taxes curtail labor's purchasing power. This has prompted the observation from other economists that a true union man going out for the evening wants not only a good time, but a good time and a half.

WHEN City P. A. John Ward, Chicago, opened bids for truck rental a couple of months ago, he found one alternative proposal offering trucks and drivers at \$32.32 per day per vehicle-man, with the proviso that drivers would help work crews when not actually driving. A loud complaint promptly arose from both the Teamsters Union and the Municipal Employees Union, protesting the proposed dual role and promising a strike against any such contract. Bid rejected.

DID you notice the advertisement of Revere Copper and Brass Incorporated in our March issue—and in a number of other national magazines? The company devoted its entire space to an appreciation of the role of purchasing agents in modern industry. The conclusion reached is: “It is perfectly clear to us that today's purchasing contributes greatly to product improvement, cost reduction, and mass production. Thereby it favorably affects the national economy, and helps raise the standard of living and of employment. . . . We salute the purchasing agents of the United States for the vital part they have played.”

ONCE every three months, just prior to the letting of quarterly food contracts, lunch time for Cook County (Ill.) P. A. Dorothy Boland and her assistant, Andy Peterson, involves the tasting of 162 different food products at the kitchen of the County Hospital. The menu, as reported in the *Chicago News*, consists of four to six samples of 26 kinds of canned fruit and vegetables, three brands of macaroni and spaghetti, and five varieties of coffee.

THE Sales Executives Club of Northern New Jersey recently observed “Salesmen's Week,” and Governor Driscoll recognized the occasion with an official statement

THE Kiplinger Magazine *Changing Times* for March also features purchasing, which is characterized as “a tough job . . . an awesome

responsibility . . . an important part of management." The article, entitled "What it's like to be a Purchasing Agent" is based on an analysis of the activities of H. F. ("Hack") Jones of du Pont, past president and current educational chairman of the N.A.P.A.

A NOTHER purchasing department to get into the feature pages is Joe Nicholson's oft-cited municipal purchasing organization of Milwaukee. The *Tip-Off*, house organ of the Cordes Supply Company of that city, devoted three full pages of its January issue, complete with chart and photos, to this operation, developing the thesis that "Governmental Purchasing is B-I-G Business."

A CCORDING to the *Houston Press*, City P. A. Tom Harling was foiled in a recent attempt to save some money for the taxpayers when a supply source that he had counted on "for free" let him down. The enterprising reporter noted that the monthly food order for the zoo listed fish, horsemeat, vegetables, and other delicacies—but no peanuts, which everyone knows rank high on the menu for our furry friends. When queried on this omission, he remarked: "Peanuts? We expect the public to furnish those." But apparently the public didn't cooperate, for the *Press* reporter observed that an order was issued the following week for 100 pounds of peanuts, at 21 cents per pound.

R EMEMBER the days when it was hard to find employment? Business columnist J. A. Livingston puts a new twist on an old expression by titling one of his recent reports, "Unemployment Is Hard to Find." This seems to mean that most of us are going to have no trouble keeping comfortably busy for some time to come. Mr. Livingston goes a step further by characterizing the present situation as one of "stabilized prosperity." That sounds suspiciously like what we've been hearing for the past several years, but Mr. Livingston points out that it is now being done without the benefit of ceilings and controls, and points out that production is high and inflation has been negligible since decontrol. Then, like a true economist, he inserts a hedge in his concluding observation: "If sales don't go well, the much discussed turndown will be under way."

New Way to Reduce Sling Costs 22.3%



Notice how Pin-Lock Thimbles are held securely in position by steel pins. These pins make it easy to transfer Pin-Lock Thimbles to replacement Red-Strand Slings.

**Save by reusing
Pin-Lock Thimbles on
Red-Strand Braided Slings**

Now . . . stop discarding still-good sling thimbles! With Red-Strand Braided Slings, you simply transfer reusable Pin-Lock Thimbles from one sling to another. *Cut costs substantially.*

Savings of 22.3% are typical. See chart at left for other examples.

Pin-Lock Thimbles also guard against unexpected damage to sling loops. They're made of extra heavy, extra durable cast steel.

You save still more because Red-Strand Slings are made of higher-than-rated quality Leschen wire rope—famous for longer-than-expected service.

Doesn't this suggest checking Red-Strand Slings *right now*?

See your **LESCHEN** representative or write for folder, "NEW IDEAS in Slings."

A. Leschen & Sons Rope Co.
St. Louis 12, Mo.



**HERE'S HOW MUCH YOU SAVE
WITH Red-Strand SLINGS
AND Pin-Lock THIMBLES**

Sling Size	% Savings
3/16" x 10'	33.0%
1/2" x 10'	23.6%
1/2" x 20'	17.2%
3/4" x 8'	22.3%
1/4" x 5'	15.5%
3/16" x 8'	13.0%
3/8" x 10'	8.5%

LESCHEN

Red-Strand SLINGS & WIRE ROPE
of Higher-Than-Rated Quality



YOUR COMPANY'S BIGGEST UNLISTED ASSET

...your Local Industrial Distributor

Just reach for the phone . . . call your local Brown & Sharpe Distributor . . . within a few hours, even minutes, many of the famous products shown here can be delivered to your plant. That's service! . . . And that's one reason your Brown & Sharpe Distributor is such a great asset to your company.

All he asks in return is the chance to serve you again. Talk over your problems with him . . . his experience gained through contact with hundreds of plants may suggest many economical solutions. He'll appreciate your consideration . . . and, remember, in an emergency he's the man who may make the difference between profit and loss for your company.

Brown & Sharpe Mfg. Co.,
Providence 1, R. I., U.S.A.

An Old Adage Revived

FOR a period of three to four years past, management and sales executives have been anticipating the return of conditions under which there would be real competition for getting business. The basic elements of the national economy have long been such as to make this development inevitable and imminent, but a series of complicating factors have arisen to postpone the day. Some of these have been unpredictable, like the demands for national defense production; others have been artificial, like the governmental controls over production and prices, only recently removed.

It is now patent to all observers that the basic economic forces have prevailed; the new era of competition is here. Even a casual reading of the current literature on marketing and distribution show that this is the one factor uppermost in the minds of sales management, and company management, today.

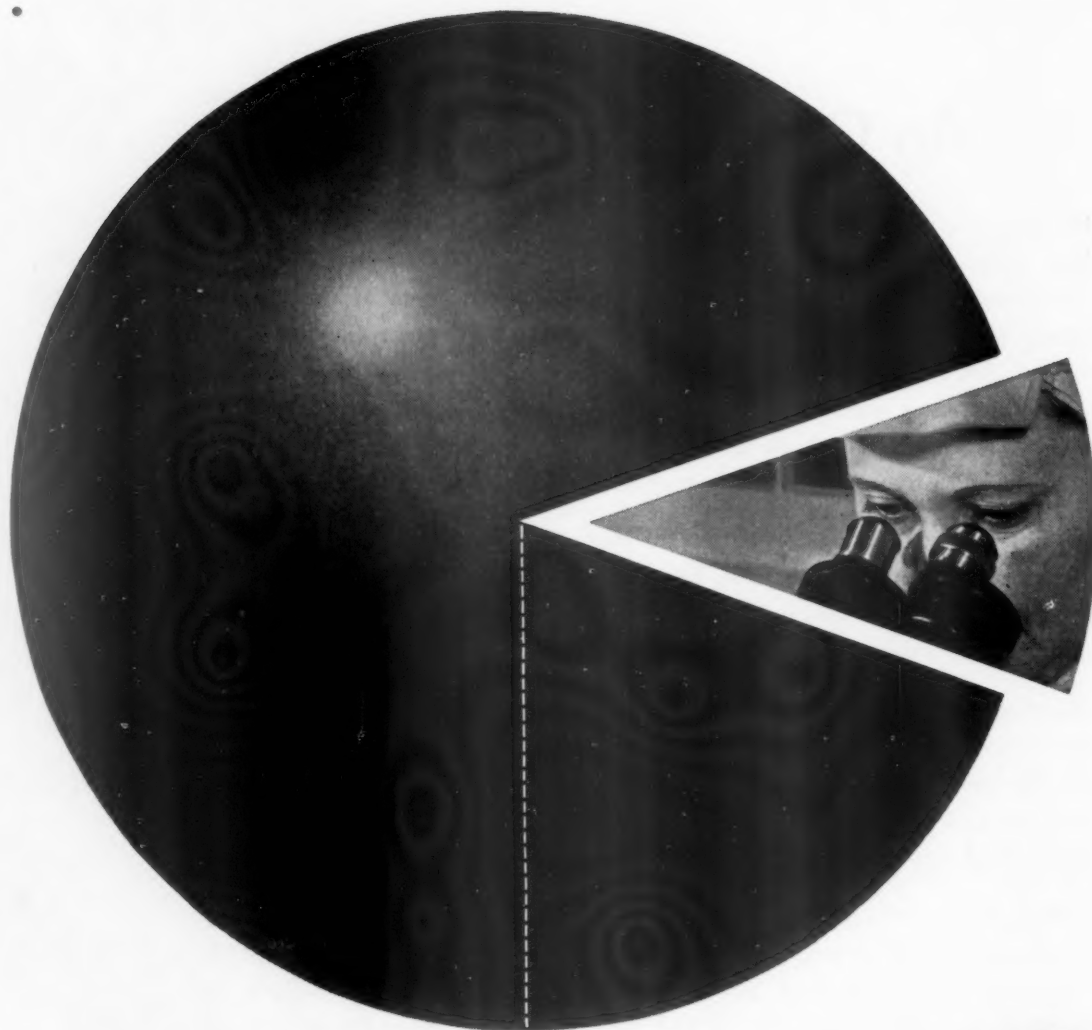
The effect on purchasing, as a buying operation, has been quickly experienced. More salesmen are calling on purchasing offices, there is a wider selection and a broader base of supply available to the buyer, deliveries are faster, prices are weaker, and there is a more active desire on the part of venders to improve customer service.

There is a deeper significance, not always so readily noted, in the effect on purchasing as part of an organization that must go out and sell in this competitive market. For purchasing, like every other department, has been put on notice to do its part in maintaining and improving the company's competitive position in its industry.

Purchasing, with the responsibility for wise expenditure of one-half or more of the company's total sales income, being the focal point for every item of material and supply and equipment involved in the company's production operations, and having its finger on the pulse of sensitive competitive market, is in a peculiarly strategic position to make a major contribution in meeting this management problem. The future of many a business may well lie in the performance of its purchasing department in the critical days ahead.

Wise management now recalls a half-forgotten business maxim that reminds us: "Well bought is half sold." Wise management is now looking to its purchasing department not only to conserve costs and profits by obtaining maximum value for every dollar of expenditure. It recognizes that purchasing holds the key to what may be equally important in these days, as a constructive selling factor by making it possible to give more value in return for the customer's dollar.

Stuart F. Henrity

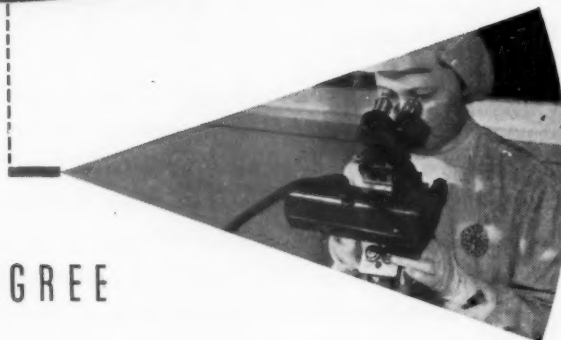


ACCURATE TO THE N^D DEGREE

Today's machines . . . automobiles or aircraft . . . conveyors or combines . . . recording instruments or radar installations . . . require accurate, low friction support for their moving parts. Where ball bearings are best for this job, the *best ball bearings* are New Departures, because of the highest quality standards in the industry.

For many New Departure bearings the diameter and roundness of the balls are held within the limits of a few millionths of an inch. And other parts of the bearings . . . rings, races, separators and seals . . . must pass batteries of scientific inspection devices and skilled operators, before and after assembly.

If an application calls for ball bearings of pre-determined accuracy and life expectancy, install New Departures. Keep your eye on the BALL to be sure of your BEARINGS!



Typical of the careful inspection which New Departure bearing parts must undergo, a raceway is checked by powerful microscope which could reveal the most minute flaw.

New Departure ball bearings are readily available at your equipment dealer or bearing distributor—supplied from the industry's largest nation-wide network of warehouse stocks.

NOTHING ROLLS LIKE A BALL 



NEW DEPARTURE

BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT
Also Makers of the Famous New Departure Coaster Brake

In This Issue

This is the fifth annual issue of PURCHASING devoted specifically to the "Purchase for Profit" theme. Purchasing agents who have found the previous issues in this series to be of practical help, guidance, and inspiration in saving important dollars for their companies—and there are many who have told us that this is their experience—will find in these pages many additional and up-to-the-minute examples of such savings that have been made, many of which can be duplicated in other operations. The articles reporting on cost-saving programs present a diversified cross-section of different types of industries, and companies of various sizes. Again it should be emphasized that the principles and techniques which have proved successful in one case can be adapted for use in any organization, regardless of the size or nature of the business. Their effectiveness is limited only to the initiative and imagination of the purchasing executive.

We continually learn more about the business of profit-making purchases. One of the developments of the past year has been the trend away from using the term "Value Analysis" and toward "Value Buying". This is a broader and more inclusive term, reflecting the more general acceptance of the principles involved as a basic part of the purchasing responsibility, rather than a particular technique. This is a significant sign of purchasing maturity and growth.

One aspect of the subject that is brought out clearly in this year's issue is that maximum results in a "Value Buying" program can be achieved only when this principle and objective are definitely accepted as a company policy, not a Purchasing Department project alone, but with the full and active support of top management. This is stressed in the articles. There is further impressive evidence of modern management's concurrence, in the statements by fourteen leading industrialists, presidents of successful and profitable companies, telling what they expect of their Purchasing Departments in contributing to the over-all planning and operations of their respective organizations in the competitive business situation.

In many of the case studies of profitable purchases here reported, the added value is achieved in terms of product improvement, more efficient methods and equipment, and more economical manufacture, rather than directly in terms of purchase cost. The value is none the less real, and none the less a concern of purchasing. End results and end costs are the objective, and it requires teamwork throughout the entire organization to attain these goals. But this search for ultimate value is implemented by competent purchasing, and is frequently initiated in the Purchasing Department. Value is everybody's business, but the cost-conscious, value-wise Purchasing Department, responsible for every individual item of procurement and, in the aggregate, for the greatest bulk of company expenditure, is in a strategic position to establish company policy and to effectuate the potential profit-making opportunities. Here's how!

COMING—IN NEXT MONTH'S ISSUE

**Divisional Buying Organization at General Motors
The Industrial Future of Atomic Energy**



Meeting Emergency Demands for Steel

Here are records of six emergencies faced—and met—
by Ryerson Steel Service:

Shutdown Averted

4:30 p.m.—1000 lbs. bar stock urgently needed to avert shutdown of night operations. Order processed by office at 4:35; goes to warehouse at 4:41. Steel leaves Ryerson plant at 5:30; arrives at customer's plant (7 miles away) at 6:05 p.m.

Shipped in 1½ hours

10:15 a.m.—two plates needed immediately. With customer still on phone, Service Department alerted. Steel sheared to size and on its way by 11:45 a.m. same morning.

Night Shift Comes Through

3:00 p.m.—order phoned in for 20,000 lbs. of sheet steel. Needed (90 miles away) at 8:00 a.m. next day. Working through the night, Ryerson warehouse crew cuts the steel—loads it on truck that leaves at 6:00 in the morning. Shipment arrives at customer's plant on time.

Breakdown Saturday—Production Monday

Saturday—11:45 a.m. Emergency call. 8" alloy steel round needed to repair breakdown of main shaft. Cut during lunch hour, the 1700-lb. bar is immediately trucked to airport; loaded on cargo plane. Customer meets plane on arrival in distant city. Repairs are completed Sunday; full production resumed on Monday.

Delivery 600 Miles Away—7 Hours

3:00 p.m.—200 lbs. of flat bars, in cut lengths, needed in a hurry 600 miles away. Just 2½ hours after receipt of order, plane takes off with steel from Ryerson. At 10:51 p.m. same day, customer has his steel.

Still Hot When Delivered

11:15 a.m.—Manufacturer reports breakdown; needs 2" x 72" x 10' plate at once—must be flame cut. Plate delivered at 2:15 p.m., still hot.

Of course, out of thousands of orders, we can fill only relatively few at such breakneck speed. However, in emergencies, the world's largest steel service organization, with 15 interconnected plants, is your best source for steel. And, despite some shortages, you can also count on Ryerson for most every day-to-day steel requirement. So when you need steel—carbon, alloy, stainless—call your nearby Ryerson plant.

PRINCIPAL PRODUCTS: CARBON, ALLOY & STAINLESS STEELS—BARS, STRUCTURALS, PLATES, SHEETS, TUBING, MACHINERY & TOOLS, ETC.

RYERSON STEEL

JOSEPH T. RYERSON & SON, INC. PLANTS AT: NEW YORK • BOSTON • PHILADELPHIA • CINCINNATI • CLEVELAND • DETROIT
PITTSBURGH • BUFFALO • CHICAGO • MILWAUKEE • ST. LOUIS • LOS ANGELES • SAN FRANCISCO • SPOKANE • SEATTLE

**Management Knows
That We Are Back in an Era of**

COMPETITION

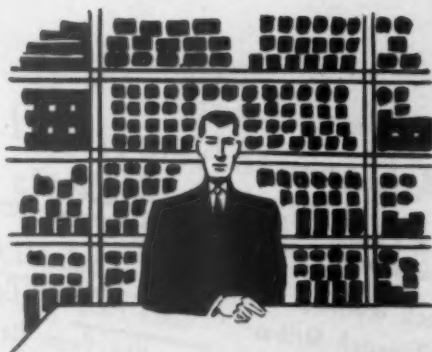
THE EVIDENCE:



More Salesmen Calling



Faster Service Offered



More Goods Available



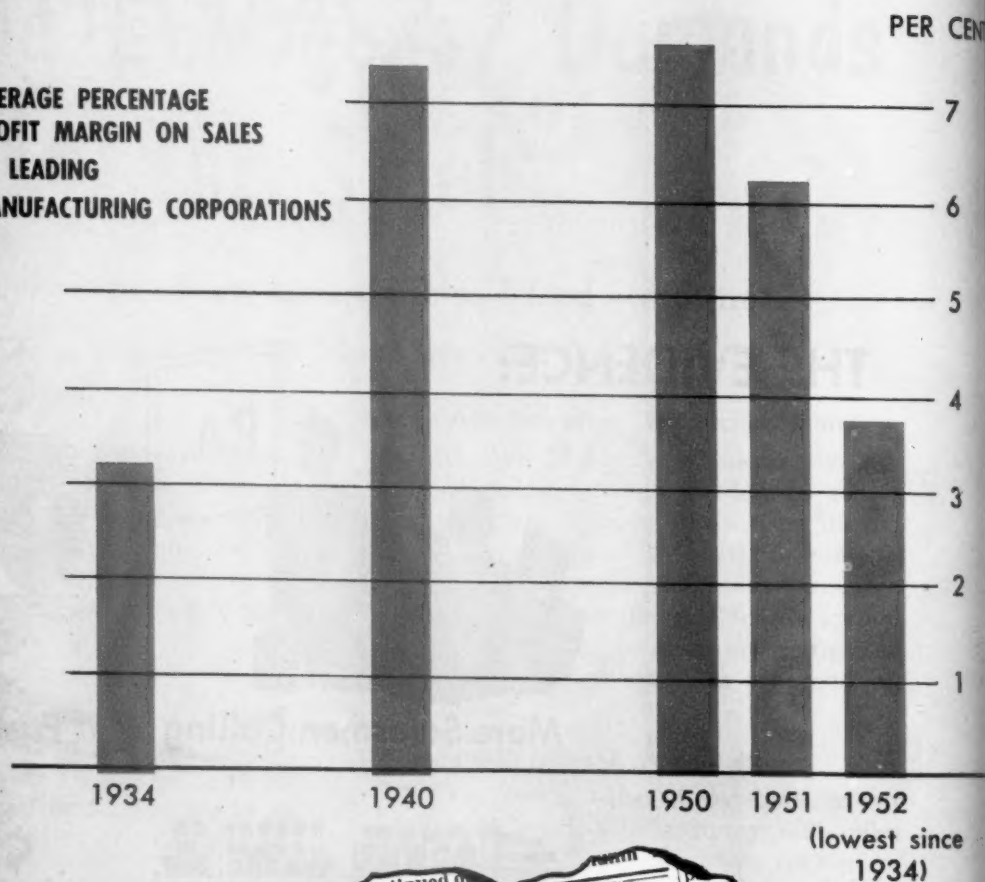
Firmer Price Resistance

**There's A Big Job for Every Company Today—
To Maintain A Strong
Competitive Position in Its Industry**

It's no easy problem...

In the Manufacturing Industries Profit Margins are Shrinking

AVERAGE PERCENTAGE
PROFIT MARGIN ON SALES
OF LEADING
MANUFACTURING CORPORATIONS



(Source: The National City
Bank of New York)

Wages Advance to New High Level; Business Net Down to 4 Cents on \$1

Twice as Much Working Time
Was Lost Through Strikes
Last Year as in 1951

By A. H. RASKIN

Restive under an economic policy that was half-controlled and half-free, organized labor pushed wages to record heights last year, but lost more than twice as much time through strikes as in 1951.

Two of the country's most powerful union leaders died and two others quit, bringing new men and new ideas to positions of command. Labor worked harder and more unitedly than ever before to elect a Democratic President, but Eisenhower the

Return on Sales Is the Lowest
Since 1932 Yet Confidence
Has Been Restored

By CLARE M. RECKERT

Greater confidence in corporate profits has been inspired by improved conditions in recent months and the prospect of more favorable tax, labor and fiscal policies under the new Administration. Other signs, however, point to somewhat lower earnings in 1953 than last year's returns of \$17,500,000,000 compared with \$18,700,000,000 in 1951.

The confusion and inconsistency that have been clouding the economic picture are exemplified by

THE NEW YORK TIMES
JANUARY 5, 1953

Industry Must CUT COSTS!

The question is - - - -

HOW?

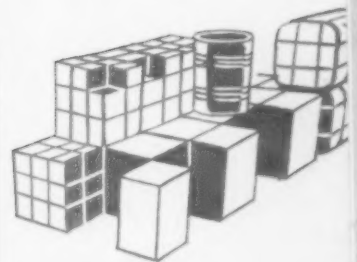
Are labor costs likely to go down?

NO



Are material costs likely to decline?

NO



Are taxes likely to be cut?

NOT IMMEDIATELY



There is a way . . .

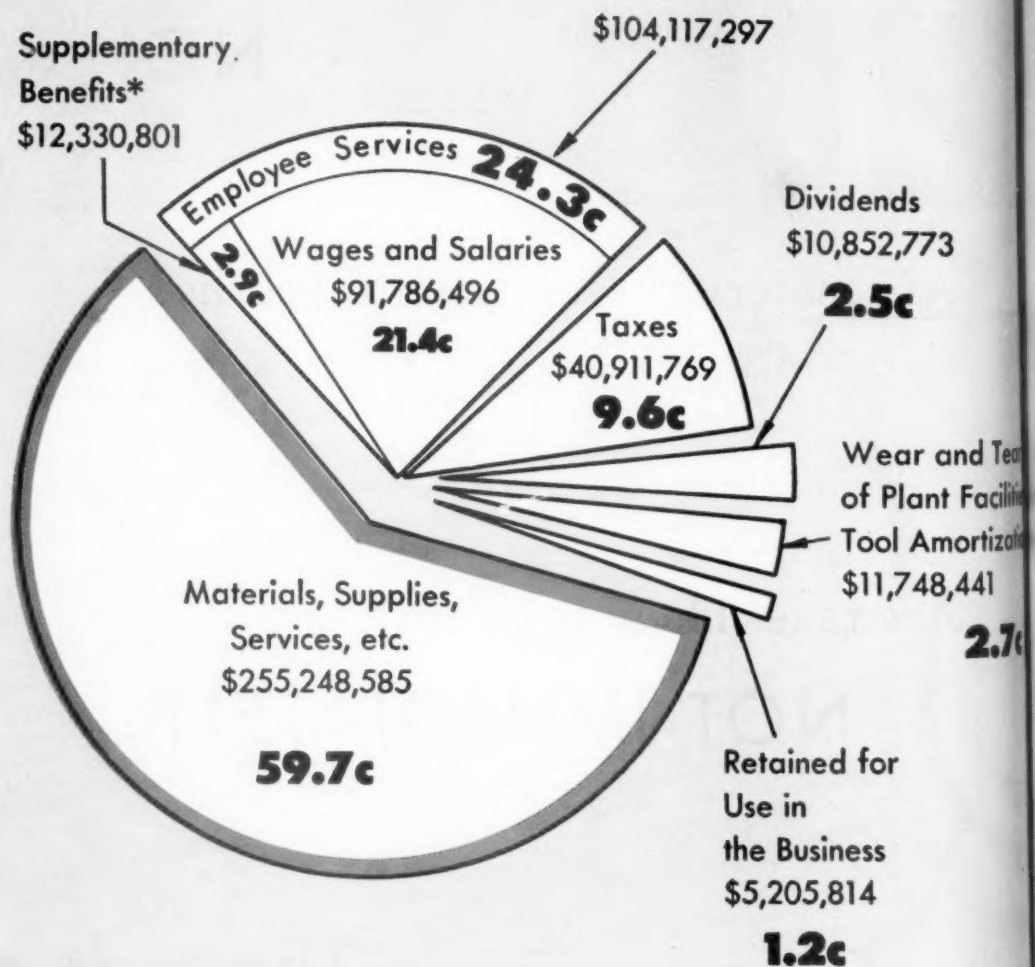
...Through More Efficient Purchasing

BECAUSE

Over 50% of every sales dollar is spent by Industry's Purchasing Departments for materials, equipment and supplies.

TYPICAL EXAMPLES

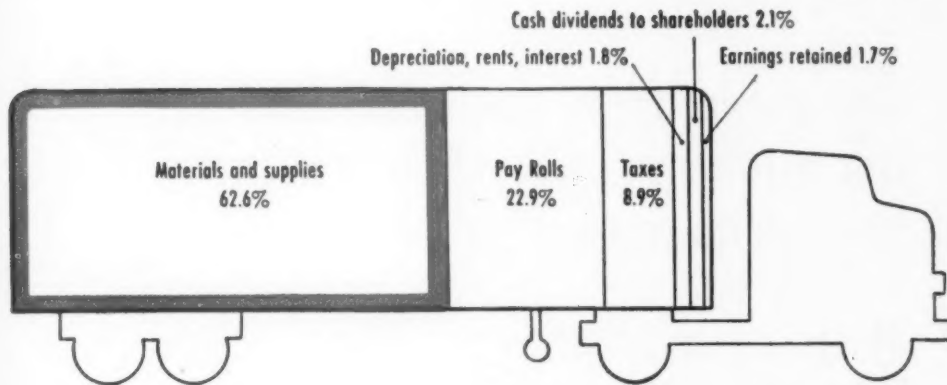
How the sales dollar is spent at
Flash-Kelvinator Corp.



*Supplementary benefits include the costs of pensions, insurance and payroll taxes and holiday and vacation pay for hourly employees.

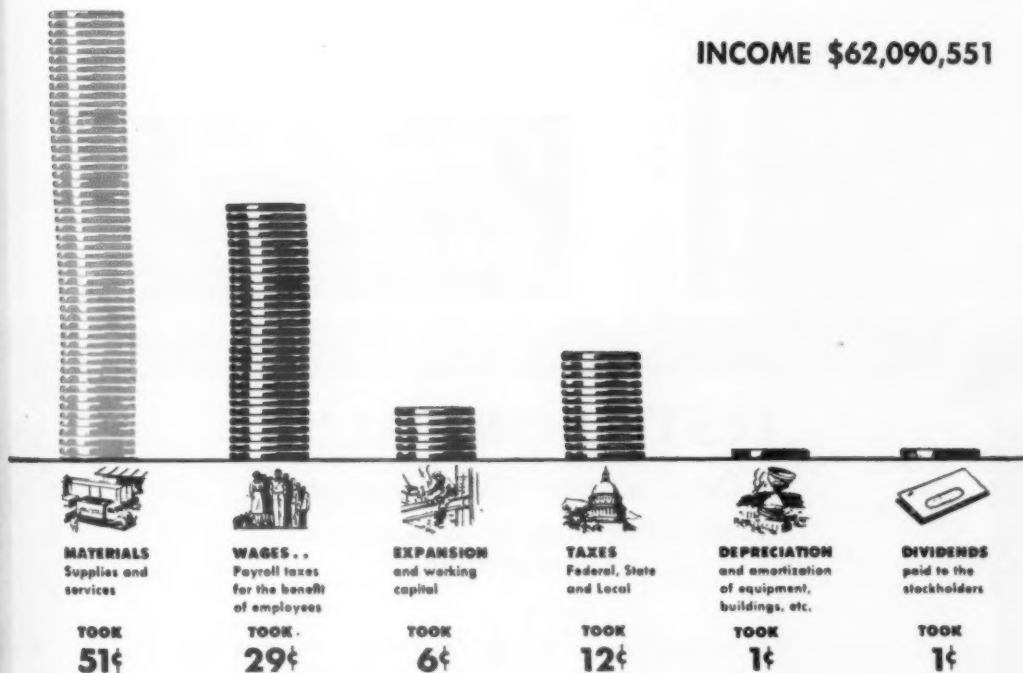
GROSS SALES REVENUE WAS USED AS FOLLOWS

INCOME \$161,612,310



How the sales dollar is spent at Fruehauf Trailer Co.

INCOME \$62,090,551



How the sales dollar is spent at Harnischfeger Corp.

Just imagine what a 1% improved efficiency in buying operations would mean to company profits and competitive position.

AND BECAUSE

Greater Value is the Theme of Modern Purchasing

Companies large and small are finding added profits through these new techniques

Major emphasis is placed on **VALUE ANALYSIS** in the educational program of the National Association of Purchasing Agents

Recent training manual issued by N.A.P.A. for its members

**CUTTING COSTS
by
ANALYZING VALUES**

Typical Example of Modern Purchasing Policy

TESTS FOR VALUE

Our Challenge—Our Obligation

*Every material, every part, every operation
must pass these tests*

★ ★ ★

1. Does its use contribute Value?
2. Is its cost proportionate to its usefulness?
3. Does it need all of its features?
4. Is there anything better for the intended use?
5. Can a usable part be made by a lower cost method?
6. Can a standard product be found which will be usable?
7. Is it made on proper tooling—considering quantities used?
8. Do material, reasonable labor, overhead and profit total its cost?
9. Will another dependable supplier provide it for less?
10. Is anyone buying it for less?

H. E. Elch

GENERAL ELECTRIC

Company Presidents Point

to Purchasing's Part in . . .

... PROFITABLE OPERATIONS ... COMPETITIVE COMPETENCE ... PRESTIGE AND PROGRESS

Statements by representative leaders in American industry, reflecting the views of top management on the responsibilities and contributions of Purchasing in the successful modern organization.

PURCHASING IS MORE THAN PROCUREMENT

PURCHASING has always been recognized as an extremely important function in our business. The responsibilities of this department have increased as the number of purchased items has grown, and more recently as several complicated defense items have gone into production.

I suppose situations vary with the type of organization, but in our case we expect a great deal more of our purchasing people than the mere placing of orders and checking prices.

Purchasing is, in a sense, an arm of our research activities, constantly on the alert for new materials, new processes, new types of machinery for factory use.

We also consider our Purchasing Department a considerable factor in our public relations—certainly with that rather extensive group of companies which make up our suppliers. Some 9,500 salesmen call on our Purchasing Department during a year. Some of them represent five or six different firms, as manufacturers' agents. We try to receive these men as we would like our own salesmen to be received, and we are rather proud of our relations with suppliers over the years. We deal with approximately 20,000 suppliers, and have been doing business with one firm for 54 years.

An alert Purchasing Department is likewise an effective listening post on economic developments. It is part of the purchasing job to anticipate trends, and information gained in this way can often be used for other purposes of management.

All in all, Purchasing plays a multi-sided role in our business, and every phase is important.



STANLEY C. ALLYN, PRESIDENT

THE NATIONAL CASH REGISTER COMPANY, DAYTON, OHIO

PURCHASING IS IMPORTANT TO NET PROFIT



THE Purchasing Department of International Business Machines Corporation has an important place in our management, with responsibility for the procurement of materials, parts, assemblies, equipment, and services amounting to approximately 40% of our sales dollar.

IBM takes great pride in the high standards of quality and performance of its machines. Purchasing plays an important part by buying quality materials, parts, etc., at prices that are fair to each of our vendors and also fair to IBM. A fair price is one that permits both of us to continue to make a profit for our stockholders, market our products at a reasonable price, and pay our employees a fair day's wages.

Also, we realize that our buyers are in contact with representatives of well over 10,000 vendors in the course of a year's time, and a great amount of good will can be developed through these contacts. It is our firm policy to give these vendors every opportunity to explain the advantages of their products and services—the same opportunity that we would like our own sales representatives to be given.

T. J. WATSON, JR., PRESIDENT

INTERNATIONAL BUSINESS MACHINES CORPORATION, NEW YORK, N. Y.

SOUND PURCHASING IS A MAJOR FACTOR IN BUSINESS GROWTH



OUR approach to purchasing at Nash-Kelvinator is based on three fundamental principles:

1. Purchasing is a primary concern of top management.
2. Successful competitive selling requires equally successful competitive buying.
3. Purchasing is a two-way street, in which both the buyer and the supplier must find advantage in the relationship.

We feel that sound purchasing policies have been a major factor in our growth from net sales of \$73 million in 1940 to a current level of more than five times that amount.

G. W. MASON, PRESIDENT, CHAIRMAN OF THE BOARD
NASH-KELVINATOR CORPORATION, DETROIT, MICHIGAN

COMPETENCE — INTEGRITY — AUTHORITY

IN most industrial enterprises, the Purchasing Department supervises the expenditure of more money, and is responsible for greater financial commitments, than any other section of the business. Therefore it seems only logical to insist upon the highest level of competence and integrity in the executives handling this very important function, and to delegate sufficient authority to them so they can carry out their duties with the same good judgment and serious consideration they would give to the expenditure of their own money in their own business.

J. E. CAIN, PRESIDENT

P. R. MALLORY & COMPANY, INC., INDIANAPOLIS, INDIANA



Fabian Bachrach

PURCHASING MUST LOOK TO THE FUTURE

ONE has only to look at a Dow annual report to discover that in a typical year more than one-third of our income dollar is spent for materials and services purchased from others. This undramatic but mathematical evidence of the importance of procurement in our organization becomes the more interesting in the light of our position as a producer of basic materials for other companies and industries.

Competition today is at a high level, and indications are that in the immediate future our economy generally will become even more highly competitive. Under these conditions, the purchasing function must be carried on with maximum alertness, efficiency, and foresight if production costs are to be held to a minimum.

While purchasing acumen is vital on a day-to-day basis, there is still one other consideration which is of special importance to a so-called growth company such as ours. This involves constant long-range study and planning for the future needs of a growing business—a firm grasp of probable future material sources and resources. In looking to the future, therefore, we rely heavily upon the closest cooperation between the function of procurement and those of research, production planning, and engineering.

LELAND I. DOAN, PRESIDENT

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN



PURCHASING COORDINATES SUPPLY AND USE



Fabian Bachrach

THE electrical appliance industry is extremely competitive and volatile. Purchased materials may account for one-half of the total cost of a device, which means that procurement of materials plays a most important part in obtaining competitive costs.

The business is seasonal, which causes relatively wide swings in production. The flow of materials must be carefully controlled to prevent accumulation of expensive inventories. Since the war, there have been relatively few months in which the materials used in appliances have been in free supply. This has meant that availability and procurement of materials virtually controlled production and sales.

Hotpoint has recognized the importance of material procurement, as evidenced by the departmental status of the group responsible for that function. The well developed sense of responsibility which this type of organization creates makes for better policies and practices in dealing with our suppliers. We attempt to operate as if our suppliers were members of our own organization, separated only by corporate structure. We have found this to be successful, and we plan to continue the practice.

JOHN C. SHARP, PRESIDENT, HOTPOINT COMPANY

A DIVISION OF GENERAL ELECTRIC COMPANY, CHICAGO, ILLINOIS

PURCHASING FEELS PULSE OF MARKETS



THE first indications of changing market trends are sensed by the Sales Department (as to our products) and by the Purchasing Department (as to the products of others). Any failure of constant intercommunication between these two departments proves costly, whereas an immediate knowledge of changing circumstances as to adequacy of supply and greater or less demand proves immeasurably beneficial in management planning. We cannot afford a failure to advise Purchasing, nor can we afford a failure of Purchasing to report its sense of trends — and this applies even to relatively unimportant indications. The interchange must be constant.

W. H. COLVIN, PRESIDENT

CRUCIBLE STEEL COMPANY OF AMERICA, NEW YORK, N. Y.

DON'T UNDERESTIMATE IMPORTANCE OF PURCHASING

WE at Norton Company recognize fully the responsibility of the purchasing function. Our General Purchasing Agent reports directly to the Executive Vice President.

Purchasing today is a highly developed operation, and requires the closest coordination between all members of the management team. The importance of the purchasing function cannot be overestimated — and it must not be underestimated — as the purchasing agent spends a high percentage of any company's gross income. In this highly competitive market of today, if purchasing is not handled in an efficient manner the end product is bound to suffer. We expect our Purchasing Department to fulfill these obligations.

MILTON P. HIGGINS, PRESIDENT
NORTON COMPANY, WORCESTER, MASS.



PURCHASING — KEY FACTOR IN COMPETITION

PURCHASING has become an art. The purchasing agent of today is a salesman who must also "buy right". If that seems to defy reason, then we have to make the most of it. And making the most of it for his company is an everyday occurrence for the purchasing agent.

Unconquered by controls, and sharpened by shortages, the purchasing agent has been through several periods that try men's souls but also train their minds and make them better members of management. His importance to his company in terms of cold hard cash is now only a part of the job. His knowledge of the business, his sense of timing, and his recognition of the value of public relations have given him new standing in the industrial community.

We are now headed for a different set of circumstances, expected to bring competition in industry to the fore once again. It is a welcome and challenging change for all of us. One of the key figures in helping us to make the transition successfully will be the purchasing agent. We are mighty glad at Bristol Brass to have him on the management team.

ROGER E. GAY, PRESIDENT
THE BRISTOL BRASS CORPORATION, BRISTOL, CONN.
PRESIDENT, AMERICAN STANDARDS ASSOCIATION



John Haley

PURCHASING INFLUENCES EVERY OPERATION



WE at Chase consider Purchasing an important function in our company. The responsibilities of our Purchasing Department are to provide materials, supplies, and equipment of suitable quality in sufficient quantity, when and where they are needed. They must buy judiciously, of course, because purchasing has a very real and direct effect on every phase of our operation.

Purchasing affects production, planning, research, and public relations, as well as the costs of operation. The influence which it can exert on profits is obvious.

At Chase, the General Purchasing Agent is placed at the staff level, where policy is set and executed, and where contributions to over-all planning can be most effectively used.

R. C. DIEHL, PRESIDENT

CHASE BRASS & COPPER COMPANY, WATERBURY, CONN.

PURCHASING — A TOP LEVEL RESPONSIBILITY



FEDERAL regards procurement functions and policies as top level responsibilities. With more than 50% of our sales dollar spent for materials, parts, equipment, and services, it is only natural that Purchasing should demand and be entitled to major importance. Our Purchasing Department is required to obtain the maximum value from each dollar expended, and must function on a realistic basis of procurement economy which includes, of course, proper scheduling of deliveries and the purchase of best quality materials. Only in this way is it possible for our Purchasing Department to contribute its fair share of profit toward the success of the enterprise.

Because of the paramount importance of Purchasing and my intense interest in it, this activity reports directly to me. By keeping in close touch with the department's problems and insuring that our Engineering and Production organizations allow, wherever possible, flexibility in specifications and maximum delivery time, an efficient purchasing job is done which assists in keeping inventories in proper balance.

To further these fundamental considerations, Federal insists that its Purchasing Department personnel maintain high standards and sound business practices in dealing with its suppliers.

H. C. ROEMER, PRESIDENT

FEDERAL TELEPHONE AND RADIO CORPORATION, CLIFTON, NEW JERSEY

PURCHASING KNOWS COMPANY NEEDS AND PRODUCTS

In the Material Handling and Power Transmission Industry, every salesman calling on the Purchasing Department represents a customer or a potential customer. Our buyers often purchase from a vendor's salesman raw material and components which are used in finished products and equipment that later may be sold to that vendor company. The mutual recognition by buyer and seller of quality at prices that give full value builds a relationship that is invaluable.

To do a competent job of purchasing in our company, a buyer must have full knowledge of the material specifications and application of our company's products and equipment. He must be alert to the possible use of new equipment and material submitted to him for improving our company's products. Proper screening of new items in the Purchasing Department saves much time in other departments, making it unnecessary to review items in which we have no interest.

The control of inventory and efficient scheduling of plant production are dependent on the proper flow of purchased materials into the plants. Production delays, due to materials not being up to specification, can be avoided when the buyer has the ability to convey to the seller the complete details of his requirements. Everyone appreciates an orderly method of doing business, and while agreements frequently are couched in what may seem to be unnecessarily legalistic language, a clear understanding by both parties strengthens and enhances their relationship.

The largest portion of our cost is in purchased component equipment and materials. With the dual function of presenting themselves as salesman and buyers, it is evident that our Purchasing Departments are a vital and important part of our operations.

R. C. BECHERER, PRESIDENT
LINK-BELT COMPANY, CHICAGO, ILLINOIS



PURCHASING FOR A GROWTH INDUSTRY

PURCHASING ranks high among the functions of top management because of its direct bearing on a company's ability to operate profitably, safeguard its product quality, keep alert to new materials, and maintain good relations with other industries.

Reynolds Metals Company is especially aware of the value of sound purchasing because, since the Korean war began, new plant construction has been undertaken which will almost double the company's producing capacity. Efficient purchasing helps to keep the costs of this new capacity on a relatively economical basis, which is essential to continued operation under competitive conditions. This sharp growth of capacity has also correspondingly increased the company's need for materials and supplies, further emphasizing the rising importance of the Purchasing Department.

In a growth industry, therefore, the Purchasing



Foster Studio

Department is instrumental in determining costs, as reflected in the fixed charges on plant and equipment and in the cost of materials and supplies consumed. Profits depend on the level of these and other costs as compared to the prices received. With market development a prime objective of the aluminum industry, prices have been relatively low and consequently, to realize a fair profit, costs must be kept at a still lower level. Efficiency in purchasing is essential to any such achievement.

Purchasing and selling are the opposite sides of the same coin. Just as the successful marketing of our products depends substantially on how well our salesmen work with our customers' Purchasing Departments, so does successful buying depend on a similar relationship between the salesmen of the supplying companies and our Purchasing Department. Proper cultivation of these relationships is essential if our production lines are to be assured of the most suitable materials and in adequate quantities to meet our needs.

In a basic industry such as aluminum, serving as it does a wide range of other industries, the Purchasing Department also has a special communication and reporting job to do. It is in a key position to report to the rest of top management on developments in the many and varied supply industries. Similarly, it is able to keep those industries posted on the aluminum industry generally and on our company in particular.

These varied services have rightfully earned for the modern and alert Purchasing Department top management's recognition as a major function.

RICHARD S. REYNOLDS, JR., PRESIDENT
REYNOLDS METALS COMPANY, RICHMOND, VA.

PURCHASING FOR TECHNICAL PRODUCTION



OUR manufacturing business is more technical and specialized than most. Consequently, in dealing with these technical requirements, our Director of Purchasing and his diversified and efficient staff do not have the same freedom of action that some others have. However, this in no way lessens the important part they play in the success of our company.

It is still essential that they buy at the right price and have material and parts on hand when needed. Also, since most of our suppliers are also customers, they have a significant responsibility to our sales and public relations programs. In addition, during our recent growth years, they have been responsible for an extensive, nation-wide subcontracting operation.

For these and many others, our Director of Purchasing not only holds a key position in our organization, contributing to smooth and profitable operation, but he is free to call on any other member of our top management group for assistance. Complete cooperation and coordination are essential. Our Director is a young, aggressive man, well acquainted with our products and production, and maintaining the company's high standards of integrity.

STEVENS H. HAMMOND, CHAIRMAN OF THE BOARD
WHITING CORPORATION, HARVEY, ILLINOIS



A Message from the National President



H. W. CHRISTENSEN

President, National Association of
Purchasing Agents
Director of Purchases, Columbia-Geneva
Steel Division, United States Steel Corp.

THE last 14 years of economic abnormality, the sometimes slovenly attitude and practices they have wrought, have affected nearly every level of the business structure. And purchasing is no exception. If the salesman must learn again to sell, then it is just as certain that the buyer must learn again to buy.

We, too, have fallen into bad habits in the years just passed. Certainly the way in which purchasing has been practiced in many industries during the past decade cannot and will not be tolerated in a free competitive market. Now we are seeing the beginning of the end of that "get it at any price" policy. In the next year or two I think and hope it will completely pass from the scene.

You can depend on one thing, and of this I am absolutely certain. Advanced and intelligent management

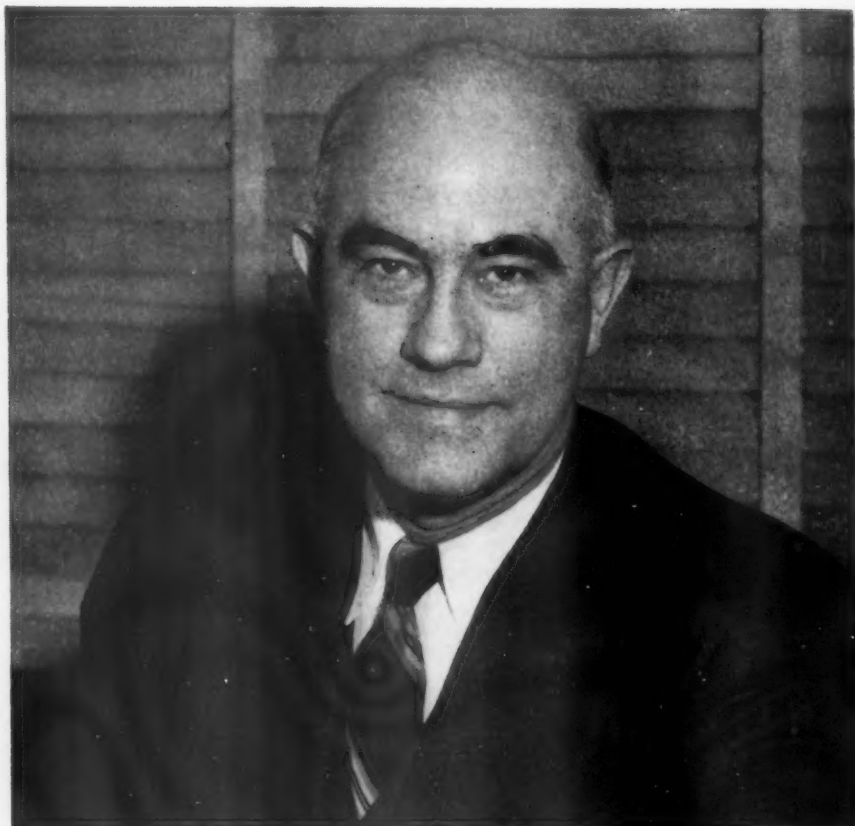
is going to place and keep the purchasing function—the purchasing executive—under a high power microscope. And why not? More than ever before, the difference between careful and careless buying is going to make the difference between profit and loss.

So you can see why I say that some of us are going to have to learn to buy all over again. We must learn now the necessity to *face up* to the sterner regime of a free and highly competitive economy. *Never more than now*, and in the days to come, has the purchasing function been more important to the economic well being of a corporation.

Now it remains only to be seen whether we are the men to do the job, to fit the function, to accept the challenge. Let's look in the mirror!



A Message from the National Secretary



GEORGE A. RENARD

Executive Secretary-Treasurer
National Association of
Purchasing Agents

PURCHASING now fields a key position on the team of top executives of well managed companies. The reason is simple and factual.

The possibilities for savings in plugging leakages in expenditures, through standardization and the price competition of representative suppliers, are recognized.

But competent purchasing executives always look beyond price in the search for economy.

Knowing the need, and being informed on the cost of products and processes which will satisfy the requirement adequately, permit negotiation for the best value available.

We may be leaving the period when advancing prices automatically increased inventory assets and translated the accretion into profits.

It will require good management teamwork to protect those escalated profits of previous years, and keep current production activities stoked with necessary materials and supplies.

Many company policies and procedures used during the period of too little are being revised to meet the reversals in supply and demand and the return of competition.

Profit opportunities are plentiful in the purchase of values and are never limited by restrictive controls or regulations. Price savings are often puny by comparison.

The simple factual objective of all good management is profits, and good purchasing makes a priority contribution on the balance sheet.

George A. Renard



A Message from the Secretary of Commerce



SINCLAIR WEEKS

Secretary
U. S. Department of Commerce

I AM pleased to send my best wishes to that very important segment of the business and industrial community—the purchasing agents of America.

As a former businessman, I know their value in saving money by wise purchasing policies. By reducing costs, they help private industry make a profit.

Those in government from the industrial world, like myself, not only carry over an appreciation of purchasing agents, but also are using their business methods in making sure that Uncle Sam gets value for every dollar.

The American public rightfully demands a reduction in unnecessary costs of government. The new administration is following this mandate.

The purchasing agent today has an ever-widening

range of responsibility. The industrial community recognizes his importance as a stabilizing factor in the economy. Intelligent and efficient buying of the enormous amounts of products and materials needed to keep our tremendous industrial machine going acts as a bulwark against economic extremes.

We are currently examining all the programs of the Department of Commerce with the aim of making them better serve the needs of the business and industrial community. We hope thereby to be able to encourage the kind of economic statesmanship so largely displayed by the purchasing men of this country. Spirited cooperation between business and government must lead to an ever-expanding, vigorous and healthy economy.

Archie Hall

A Progress Report on the Westinghouse Cost Reduction Program

COST reduction is hitting its stride at Westinghouse. Recognition of purchasing as a major contributor to profitable operation came from top management of Westinghouse in the form of the February, 1953 issue of the Westinghouse Stockholders' Quarterly. Purchasing received star billing in the story that is regularly featured in this informal message to the owners of the company.

How did the purchasing department earn such recognition? One of the major factors is an active and successful cost reduction program which distinctly highlights the department's positive contribution to company profits.

The program was first reported

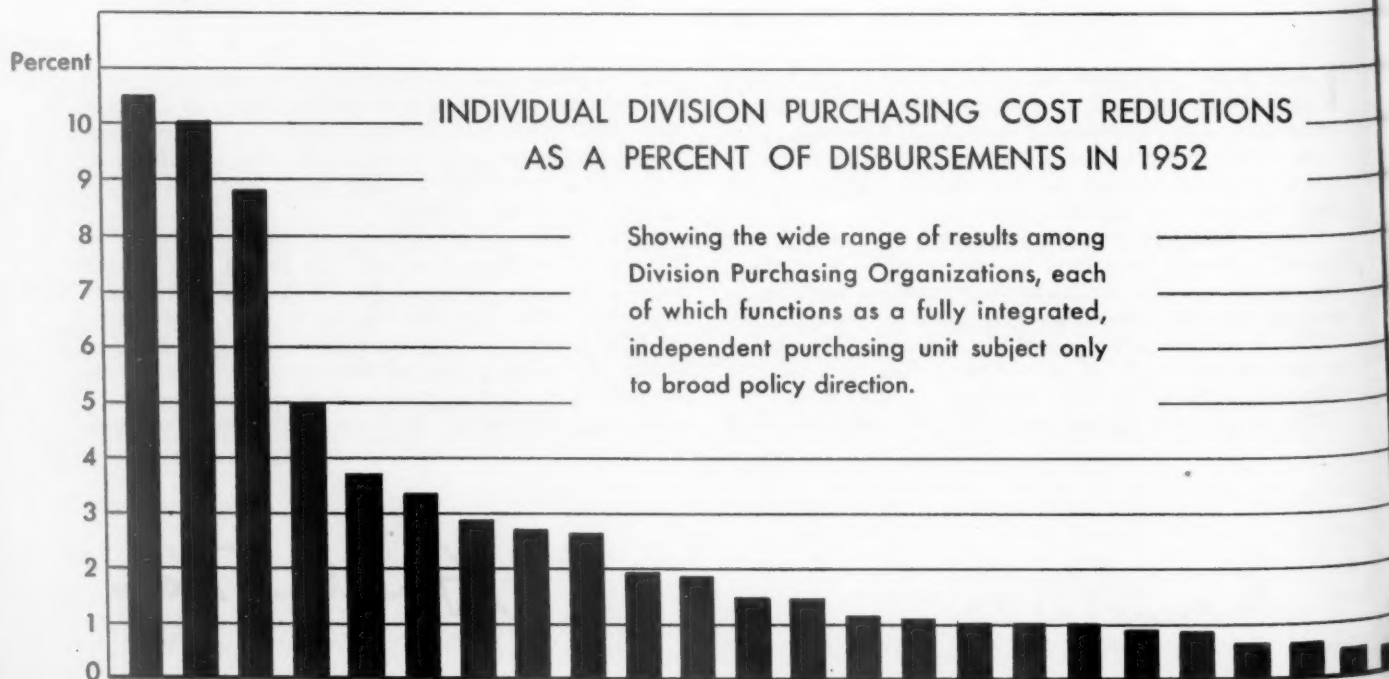
in *PURCHASING* Magazine in 1951, at which time it had been formalized and integrated with a company-wide cost reduction program. Actually, the policy and practice of cost savings had been pursued for many years under the guidance of Mr. Andrew H. Phelps, Vice President, Purchases and Traffic, as a normal and important part of a good purchasing agent's job.

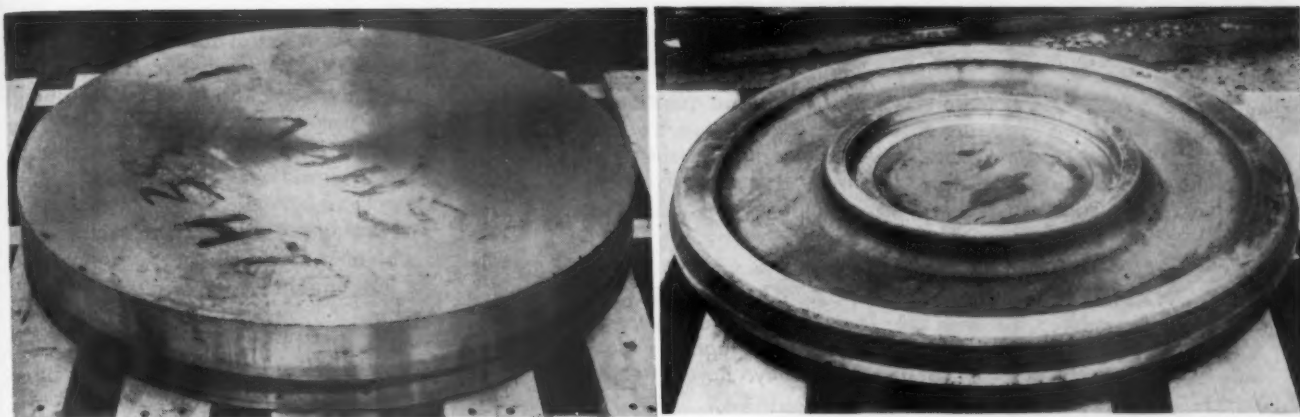
The Westinghouse experience with cost reduction techniques is particularly worthy of study since *these techniques have proven equally applicable to small divisions served by one-man purchasing departments and to large units such as the East Pittsburgh Divisions where purchasing spends 100 million dollars a year.*

It represents the experience of more than 25 separate purchasing departments, each one serving a fully integrated, semi-autonomous division with its own engineering and manufacturing organizations, and responsible for the profitable production and sale of a particular class of product. Thus, the cost reduction program has been "road-tested" in large and small organizations on many kinds of products from electric blankets to huge power plants manufactured on both a job shop and assembly-line basis. This accumulation of diversified experience makes it particularly profitable to review the "how it was done" of the Westinghouse program.

To review the progress of the

CHART I





Titanium is an expensive material. When a buyer suggested changing the forging process on titanium discs, the amount of material required under the new method (right) was reduced by 31%. Saving from this change amounted to \$97,205.

program in the past two years, let's take a look at Westinghouse's objectives in 1951 and compare them with accomplishments since then.

The basic objective, of course, was to increase company profit through cost reductions initiated in the purchasing department. Chart II shows that in 1950 savings amounted to nearly 5% of operating income before taxes. The following year material shortages (notably steel and copper), a boom in defense production, and the "breaking in" of a number of new plants drained off available purchasing effort to the extent that savings slipped to a little better than 3% of operating income. However, 1952 saw a recovery of initiative as the previous

year's difficulties were straightened out, and purchasing turned in savings to the tune of a new record of nearly 6% of operating income.

Westinghouse purchasing likes to measure its savings performance as a per cent of money spent for goods and services. In 1950 cost reductions were equal to about 2% of disbursements. The 1951 figure slipped to something over 1%, but it bounced back to over 2% in 1952 and at the present rate will comfortably exceed that in 1953. Serious shortages, buying and expediting problems, and many personnel changes in 1951 shifted the emphasis from cost reduction to survival. This taught us that definite procedures, proven techniques and

formal organization for action are necessary for continuing success under varying circumstances. By early last year the program was back on the track. Savings in the fourth quarter were being recorded at triple the rate of the first quarter.

Division experience with cost reduction has varied over a wide range. Some divisions have a greater opportunity available for cost reductions, while others are more aggressive in their program. The range of results in 1952 is illustrated in Chart I.

The second major goal was to increase the acceptance of the cost reduction program in the divisions as being of paramount importance to them as well as to the company as a whole. The number of projects completed went from 3,705 in 1950, down to 2,550 in 1951, but reached 5,927 in 1952. The number of individuals originating cost reductions has increased steadily from 81 in 1950, to 174 in 1951, and finally to 285 in 1952. Individual contributions in excess of \$100,000 have gone from 18 in 1950, to 31 in 1952, and in excess of \$10,000 from 81 to 142.

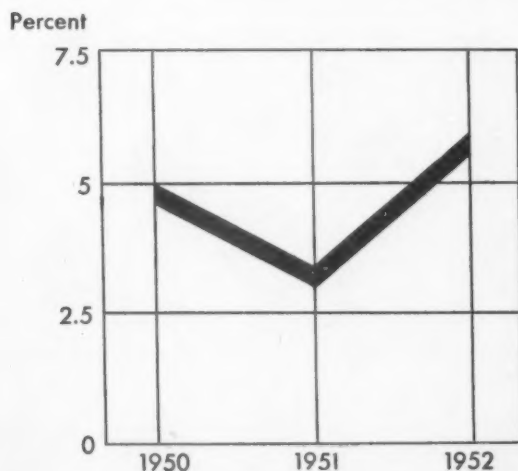
Gospel Is Spreading

While it is true that there has been an increase in total personnel in this two year period, the per cent participation has increased from 29% to 54%. This is a sure indicator of successful spreading of the gospel and the infectiousness of enthusiasm for the program.

A third objective was to highlight dramatically to top management purchasing's potential contribution to company profit. The purchasing department quarterly

CHART II

PURCHASING COST REDUCTIONS AS A PERCENT OF OPERATING INCOME BEFORE TAXES



CAN WE DO IT more economically was the question raised by a buyer in regard to enameling metal cones used on television picture tubes. He believed that it could be done, and the engineering department developed a process for it which resulted in a saving of \$108,000.

A CHANGE IN THE SPECIFICATION for insulation on switchboard wire was recommended by a buyer. Engineering investigation proved the change could be made without affecting Westinghouse quality. Result: a saving of \$117,000.

report of cost reductions is now helping to serve this purpose, being distributed to top officers. Furthermore, the company-wide cost reduction report (not prepared by purchasing) segregates purchasing's share of a division's total savings, thus spotlighting its relative contribution to the overall program. In 1952 purchasing made a substantial contribution to nearly $\frac{1}{3}$ of all company cost reductions. It effected reductions in the amount of 18% of the total completely unaided by other departments. The story of Westinghouse purchasing in the Stockholders Quarterly is additional evidence that this goal of management recognition is being achieved in no small degree.

Buyers Provide Impetus

The fourth major objective of the cost reduction program was to document purchasing's profit-making productive effort to help justify budget and personnel requirements. The naked fact after two years is that the department has been allowed to grow in spite of general expense reduction pressure. Even so, purchasing expense has grown at just a slightly greater rate than company net sales billed. In addition, cost reductions in 1952 were well over twice the cost of running the department.

In most divisions it is the buying personnel who provide the impetus for cost reductions. Such personnel have increased, and while some of the increase was due to the general growth of Westinghouse, a part of it was to provide for increased cost reduction effort. In addition, it's a rare Westinghouse purchasing department that doesn't have a cost reduction coordinator.

One of the biggest factors in producing this substantial record of progress has been the continuous driving force generated at headquarters purchasing. Major objectives have been outlined and goals set regularly. The program has been dramatized at every opportunity, such as purchasing agent meetings. Constant follow-up, both personal and written, with advice, progress reports, recognition for particularly outstanding reductions, equitable distribution of deserved laurels, and review of division performance has served to keep the program very much alive.

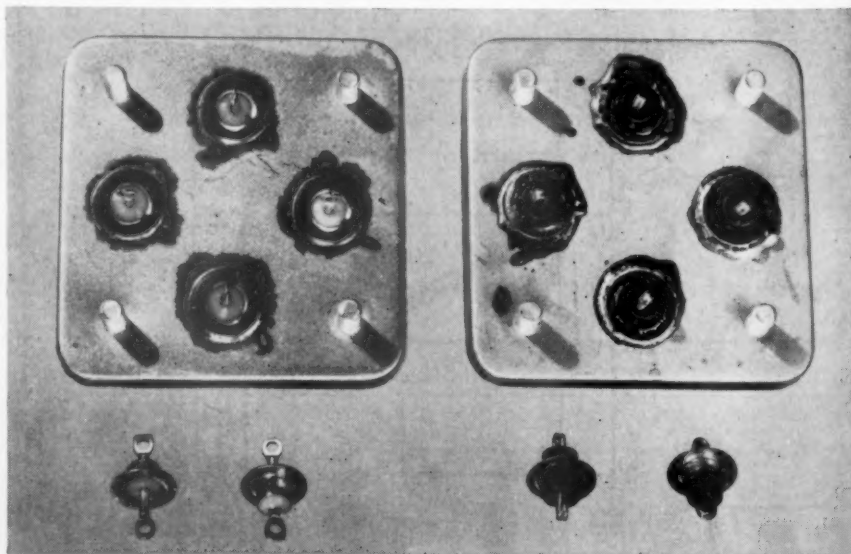
Division performance is stimulated by the knowledge that efforts are recorded, measured, ranked, reviewed and forwarded to top officers for use as a part of overall performance evaluation. A quarterly report

of performance in per cent of disbursements and number of projects per \$100,000 of disbursements lets each division know how it is doing with respect to other divisions. The per cent of disbursements measure encourages large reductions, while the number of projects yardstick encourages many smaller reductions which in total can be very large.

The bulk of cost reductions come from the individuals within divisions and it is they who must be sold on the program. The enthusiasm and drive of the boss P. A. are important, but recognition is the biggest carrot. Every saving report tells the story on who did it and how. The headquarters summary lists the names of all individual participants with their total dollar contribution, number of projects, and standing company-wide. Individual letters of commendation for especially outstanding projects are written. Cost reductions which might find application in other divisions than that of the originator are disseminated with credit to the responsible individual. Finally, the individual's cost reduction performance is a factor used in evaluation of performance for management appraisal purposes.

The distribution of credit for savings effected is an important aspect of the program, as pointed out in the original article two years ago. Any individual who makes a major contribution, such that the project might not have been concluded without it, is given credit for the full amount of the reduction whether

A buyer objected to low volume purchase of two non-standard items produced to Westinghouse specifications. Investigation revealed that standard units would perform equally well. After the substitution was approved by both engineering and production, a saving of over \$17,000 was realized.



he is the originator or not. This arrangement stimulates cooperation; the originator can lose nothing and can gain valuable advice by asking for help, while the helper stands to gain by giving the best advice and information possible. Naturally this method results in duplication of credit when reporting individual performance, but such duplication is eliminated in the division summary.

Each Department Gains

The same distribution of credit applies as between departments, and for the same reasons. Engineering can often help purchasing complete a saving and vice versa at a gain to both. Cooperation is also fostered by a demonstration on the part of purchasing technical ability—the ability to understand and positively help engineers, production people, and others. To this end purchasing has improved its technical competence by educating existing personnel and adding technically trained people to the buying function. In some larger divisions cost reduction engineers have been added to the staff to spend full time working on savings projects. Finally, in an effort to further improve cooperation, cost reduction activity is centered in some divisions in a committee consisting of purchasing, engineering, production and other interested personnel all of whom work together as one group.

Westinghouse purchasing people feel that the measurement of results of the program is important not only

General Purchasing Agent Bruce D. Henderson directs the Westinghouse Cost Reduction Program.



for control purposes, but also as a stimulant to the divisions. The knowledge that performance is being measured by definite, prescribed yardsticks serves as a spur to produce a good record. Accordingly, results are summarized quarterly by headquarters. The yardsticks are savings as a per cent of disbursements, number of projects completed per \$100,000 disbursed, relative rank against all divisions in these two measures, and improvement year by year in both measures.

Purchasing achieved its goal of top management recognition primarily by the outstanding results of the program. It remained to spotlight these results in the proper places, hence the quarterly summary sent to top officers. The results are

removed from any shadow of doubt by the established procedure of audit by an independent and unconcerned group in each division. Every savings project is checked as to the accuracy of savings claimed as well as being tested against the Westinghouse definition of a cost reduction. Then the credit is assigned in full to all departments making a substantial contribution. A final check is made at headquarters purchasing on the validity of the savings as the cost reductions are summarized for the purchasing report.

More Can Be Done

What of the future? Westinghouse purchasing executives feel that a great deal more can be done and have in mind the following objectives:

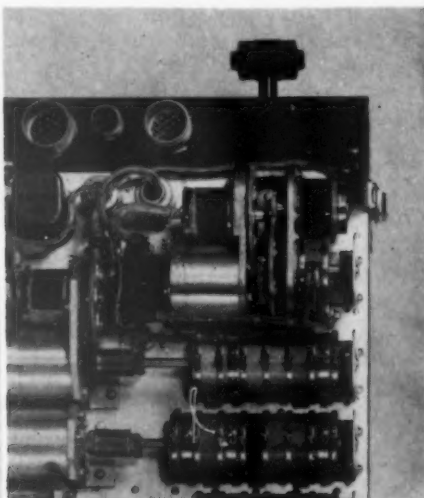
1. Ultimate 100% participation of purchasing personnel.
2. Maximum cost reduction goals for each division based on opportunity as dictated by the character of division operations.
3. All division cost reductions in excess of operating expenses.
4. Improvement of the technical competence of the purchasing organization.
5. Improvement of inter-department cooperation.
6. Continued recognition by top management.

The record shows that a well-conceived, faithfully executed cost reduction program can pay real dividends—both in profits to the company and in recognition for a job well done by purchasing. Westinghouse buyers are looking forward to more of both.

A buyer felt that the price was high on this molded part. Investigation showed the supplier using a single-cavity mold. A supplier was found who would produce the part in a multiple-cavity mold. Saving in the first year: over \$16,000.



Expensive component was needed for an electronic device. A buyer found that a new supplier could provide a simpler unit at \$164.00 less per item. Engineering concurred, with the result that a total saving of \$225,000 was achieved.



Cooperating to Cut Costs

By Joseph G. Van Nest, Director of Purchases, Purolator Products, Inc., Rahway, New Jersey

Mr. Van Nest at his desk in the Rahway headquarters of Purolator Products, Inc., makers of a wide variety of automotive and other types of filtration equipment. Purolator's purchases approximate \$12,000,000 annually.

CUTTING costs is one of those activities everyone's in favor of—but there's often a lot of disagreement on who knows best how to do it.

Here at Purolator, we work on the assumption that each major department has an important part to play in cost cutting. With the solid backing of management, purchasing, engineering and sales have built up a strong bond of mutual confidence that is producing increasingly significant results for a company operating in a highly competitive market.

Just wishing doesn't make it so. It is definite management policy that purchasing and engineering, for instance, not only work closely on company matters, but that they be physically near each other for that personal contact that so often helps bring a knotty problem to a successful conclusion. When our company moved to Rahway from Newark, purchasing's staff was enlarged, and it was given its own, complete section, with its own special entrance. Next down the hall was engineering. The move was a recognition of the importance of the purchasing function, its key role in



the company's operation, and a blow at back-door selling which had thrived in the scattered plants and offices at Newark.

Not the Only Solution

But this recognition obviously wasn't the sole solution to the problem of coordination with other departments. Performance—not nice offices—is what the manufacturing end of a business demands and must have. Purchasing done in a vacuum isn't purchasing—it's just another clerical routine. We have to know our manufacturing processes intimately, be familiar with design techniques, with the uses and capabilities of our products, know pre-

cisely what materials and supplies are needed and what possible substitutes there are. We not only have to know our actual and potential suppliers of these items, but how to develop new ones. The list of responsibilities could go on and on—suffice it to say we have to do a scientific, intelligent job of buying. There is no other alternative if we're going to live up to the full potential of our job.

How successful we have been to date is reflected in the fine cooperation we get from all departments, and the profitable purchasing that has resulted. Engineering has confidence in the purchasing department. It knows that materials, methods, technical facts, etc. are

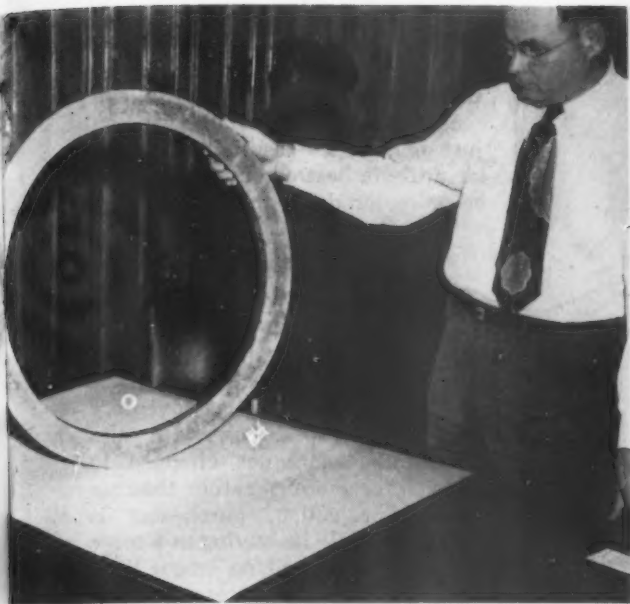
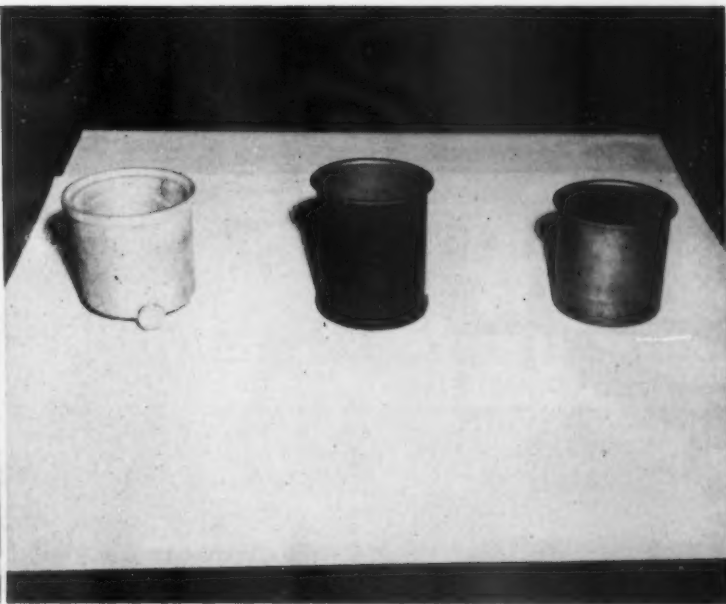


Photo Left: This aluminum ring, used for a flange on a large industrial filter, was formerly cut from 1" plate, with high scrap loss. It is now being made from bar stock, rolled to proper size, and welded at the joint. Savings approximate 45%. In addition, elimination of material handling operations has been substantial. It is bought outside as a ring, and Purolator welds and finishes it. Its quality



equals that of the former product. Photo Right: Original design for this oil filter case called for a casting. Reviewed and redesigned, it was then made as a fabricated part—two pieces, bottom plate brazed to drawn case for reinforcement. In the third change, right, it was produced as a one-piece deep drawn shell in heavier gage. Total savings: 48%.

not mystifying to the men who are doing the buying. Recognizing this, engineering not only gets along with purchasing but takes advantage of the condition by relying on purchasing to help translate drawing board plans into profitable realities. Some of the concrete results of this teamwork are illustrated in the case

histories appearing elsewhere in this article. Here are other instances where understanding, cooperation and a genuine interest in doing a good all round job for the company have paid off:

● **Engineering presented purchasing** with a set of drawings on

a bolt made on a screw machine, with a request that other methods of manufacture be investigated. We sent a buyer on a personal plant visit, along with the drawings and samples, and asked a supplier for recommendations on producing the item as a cold-headed part. This the supplier was able to do, but the

Photo Left: This case was formerly made as a deep drawn stamping. It was decided to try it as a rolled up and welded case. The change in method of fabrication was successful, resulting in a saving of 25%

without change in quality of the product. This was a case of close coordination between engineering, purchasing and supplier. Photo Right: Mr. Van Nest and Purchasing Agent John T. Gaffney.





A typical scene in Purolator's buying office. In the foreground, a Purolator production man sits in on a discussion between a vendor's representative and purchasing assistant O. J. Gallant.

tolerances required in the new method necessitated revision in the specifications. The buyer was able to approve the change tentatively, and then immediately consulted with engineering. The revision was accepted. This change in method of fabrication brought about a saving of 50% on that one part. We were able to effect the change and approve it so rapidly only because of the excellent teamwork and coordination that exist between purchasing and engineering.

● **A supplier of gray iron castings** informed us that an 8% increase in prices was absolutely necessary. One of our buyers visited his plant and by carefully reviewing the design and the foundry practices with the plant's technical men was able to suggest a different method of manufacture. The change reduced costs to the point where the price increase was canceled out—leaving the cost to us as originally, despite the increase. Specifications of the finished part were not affected. A buyer unfamiliar with his own processes and those of his suppliers would not have been able to accomplish this.

● **An oil burner filter head**—part of a very competitive item—was proven out as an aluminum sand casting. In conjunction with planning and engineering, purchasing set to work to see if it could be made as a die casting. First estimates were not encouraging. But by constant consultation with suppliers

and consistent analysis of all factors, we were able to determine it could be made as an aluminum die casting. Savings on that change approximate 45%.

● **An oil filter center bar** was being made from tubing, and a secondary operation on a screw machine was necessary to flare one end. Engineering, purchasing, and a number of suppliers reviewed the part and the method of fabrication. It was found that bar stock could be used for the part, and the end flange upset—with a saving. But it was reviewed even further, and we found that it could be produced as a screw machine part without the secondary operation. It is now being produced complete on an automatic—at a total savings of 35%.

Those are just a few examples. The list could be made a good deal longer—a thumb screw bolt, formerly machined from bar stock as a screw machine part is now purchased as a cold headed part at 50% saving; an element guide formerly fabricated as a press metal stamping is now made as an automatic eyelet part, at approximate savings of 75%—there are many like these and there will be more.

The essential element in this whole pattern of progress is the positive, flourishing mutual respect and confidence between purchasing and engineering. Engineering doesn't—and more important doesn't want to—go around or over the heads of the purchasing department to contact suppliers. They know that we

can help them, and everything is cleared through us. Their whole attitude is—what can you do to help us?

Savings of a different type—but just as definite—result from a similar attitude between purchasing and other major departments.

Inventory Reduced 40%

Last year in a cooperative effort between planning and purchasing, Purolator was able to reduce the total materials and parts inventory by more than 40%. Now, with sales forecasting techniques changed to give a three months' rather than six months' projection, purchasing is able to schedule its buying in a more orderly fashion, and no longer finds itself with large, unnecessary commitments. Forecasts now cover 90 days, but are more closely controlled by being further broken down into months. Where all third quarter material used to be scheduled on the first of July, now only August material is scheduled for the first week in July. This has given us better control all along the line—and we don't see an uncontrollable inventory situation regardless of what happens saleswise. If at some time during the term covered by the sales forecast it appears unrealistic, we will receive a cut back in time to stop ordering. Aided by the full cooperation of our suppliers we have been able to achieve more orderly buying, reduce the high cost of carrying unnecessary inventory, and maintain an operation that is more normal now than in any other comparable period.

Strict Company Policy

Secure in the knowledge of management support and the confidence of other departments purchasing can set its eye on better buying and its inevitable result—better products at lower cost. The company's strict policy is that all buying is to be done through the purchasing department—and this in turn has led to more and greater responsibility, where purchasing has to make decisions on matters that used to be considered completely outside its scope. Each stage in company relationships strengthens the next—confidence leads to greater responsibility, and greater responsibility leads to greater opportunity—that's when you have to complete the cycle by proving that the confidence wasn't misplaced.

How the Purchasing Department Contributes to Cost Reduction

By **K. R. Geist**, Director of Purchases, Allis-Chalmers Manufacturing Co., Milwaukee, Wis.

Abstract of an address at the 22nd annual Midwinter Conference of the Public Utility Buyers Group, N.A.P.A., New Orleans, March 9, 1953.

DURING the past several years, practically all industries have been faced with the problem of rising costs of materials and operation. The purchasing department at Allis-Chalmers Manufacturing Company has recognized that an important part of its responsibility is to take up a share of this burden, developing cost-saving policies and methods to avoid the necessity of increasing the cost of its products to the company's customers.

Purchasing Organization

The purchasing staff at the company's general offices, headed by the Director of Purchases, handles major contracts for materials that are common requirements at several plants. Otherwise, it serves primarily as a guide and coordinator of company purchasing policies.

The bulk of the actual buying is done by purchasing departments at the respective plants. These departments are headed by Works Purchasing Agents, reporting directly to the Works Managers at the individual plants. Each of these Works Purchasing Agents is pretty much "on his own", responsible for the supplying of all items required at his plant, except for contract materials.

Buyers are assigned to specific

groups of related commodities. For example, one buyer handles all foundry supplies and castings. Others are assigned to steel and forgings, mechanical items, non-ferrous metals, electrical supplies, stationery and office equipment.

Expediting is organized in the same way, by commodity groups corresponding to the buying classifications. In addition there are ten regional expeditors who are constantly in the field, keeping in close contact with suppliers. They effectively serve in a dual role—as trouble shooters on specific orders, and keeping the purchasing department

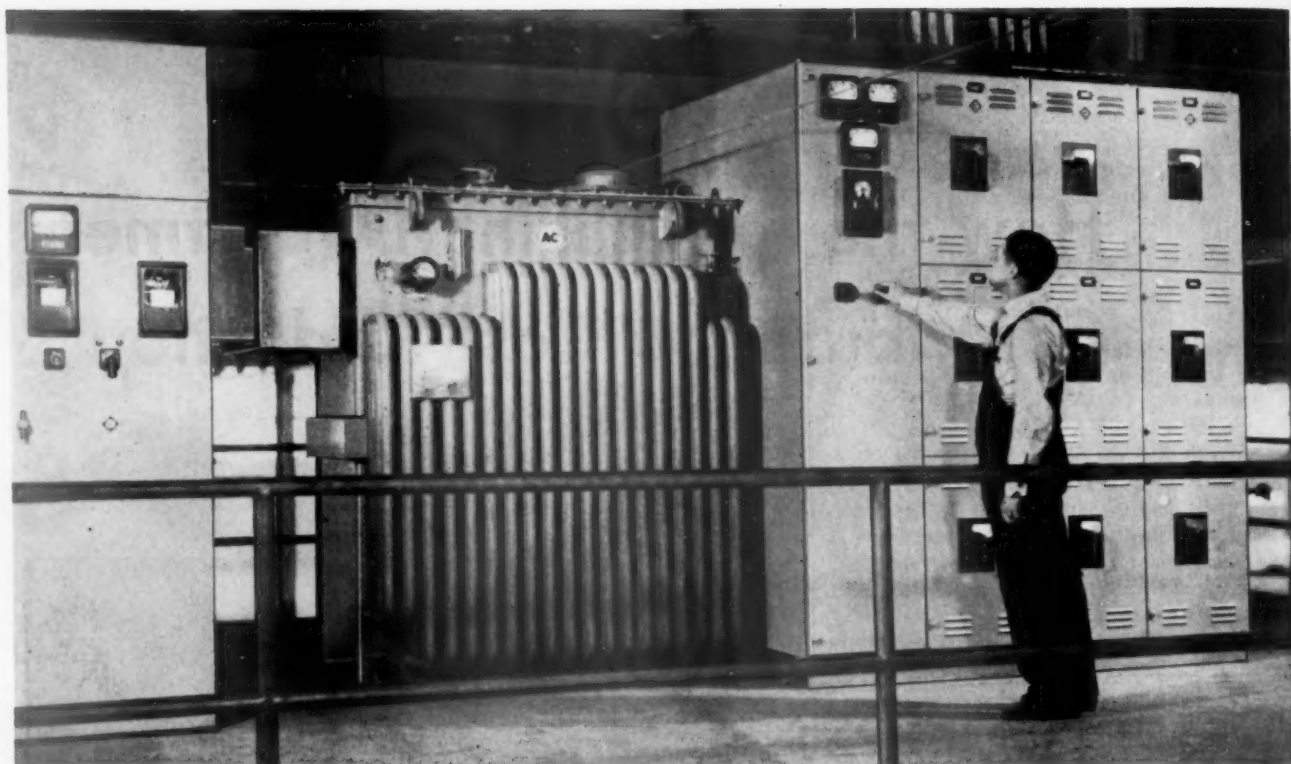
supplied with up-to-the-minute information on organization and policy changes among supplier companies, the labor situation in supplier industries, and similar factors affecting supply.

The traffic department also reports to purchasing. This arrangement has resulted in some very important cost-saving purchasing procedures, as will be shown.

Product Analysis

With some 16,000 products involved in the purchasing program, an effective system of product control and material control is impera-





Allis-Chalmers products like this unit substation place special requirements on the purchasing department.

tive. In the Tractor Division, representing approximately 60% of the company's activities, this is implemented by a Cost Reduction Committee at each plant, consisting of the Works Manager, Chief Engineer, Cost Accountant, Time Study man, and the Works Purchasing Agent or Assistant Director of Purchases.

These committees meet each week, and at each meeting one component is thoroughly analyzed from every angle, applying the principles of value analysis with the constant objective of producing an equally good or better product at less cost. This exhaustive study, pin-pointed in turn upon every component and part, takes up the material of which the component is made, looking for possibilities of advantageous substitutions or changes, and the methods of manufacture, looking for simpler and more economical designs and fabricating processes that may be applied to its production. The question of "Make or buy?" is thoroughly explored, as another possible means of ultimate cost reduction.

Many striking examples of product improvement and cost reduction have been achieved by this intensive and continuing study.

The advantages of this particular method of organization and procedure are twofold. Through the direct participation of competent

and authorized key representatives of the several departments that are concerned with and responsible for the various cost elements and the end product, it is assured that all aspects of a problem will be presented and weighed in the light of all other contributing factors. Further, with this type of committee make-up, the results of their deliberations can in most cases be in the form of decisions rather than recommendations, thereby eliminating an intermediate step which could be time-consuming as well as losing some of the values of the direct discussion.

In the Machinery Division, representing the other 40% of the company's activities, a similar plan is followed, though on a somewhat less formal basis.

Standardization

The cost reduction program at Allis-Chalmers is not limited to the generally accepted scope of value analysis, as outlined above. There are other factors contributing to this objective, which are also given close attention. For example, the company is keenly aware of the advantages to be gained from following the principles of standardization, and maintains a company committee specially devoted to this subject. Standardization of course fits in with other value analysis

procedures, but it also has broader applications with cost saving results. The purchasing department takes the lead in this company Standardization Committee.

In addition, the purchasing department also has a separate Standardization Committee within its own departmental organization. Among the projects carried on by this committee is a program looking to the standardization of nomenclature of purchased parts and supplies. When, for example, a simple, identical item, is variously referred to as a washer, spacer, or shim, the result is almost certain to be duplication and confusion, so that when requisitions for the item are received, there may be an apparent shortage even though there is a binful of the needed item on hand under some other name. Situations like this, which can be multiplied many times in the average plant where steps have not been taken to eliminate them, are a potent cause of overbuying and of costly, unnecessary inventory carrying charges.

A similar program has been undertaken to standardize material specifications. For example, it was found that there were eight different specifications for ordinary 10-20-mild steel, in eight plants. Agreement on a single specification simplifies the purchase of material and points the way to economies.

As previously mentioned, traffic management is one of the responsibilities coming within the jurisdiction of this purchasing department. Almost everyone is aware of recent increases in freight rates, affecting both inbound and outbound shipments of merchandise, and adding quite substantially to the real delivered cost of materials. Careful specification of the proper classification of materials and selection of traffic routings and methods of shipment tends to keep these added costs to a practical minimum.

Analysis Saves \$2,000

A recent analysis of inbound shipments revealed that literally hundreds of shipments were being received each week in less than carload quantities, at premium transportation costs. To counteract this situation, the company has set up a consolidated receiving station in Chicago, where these small shipments are combined and distributed to the plants at full truckload rates. The savings from this procedure alone amount to some \$2,000 per month.

Another phase of traffic rate studies that the purchasing department has used with excellent results is to take advantage of the "fabrication in transit" privilege. By this procedure, in some instances, it has

been possible to procure raw materials from more distant sources and deliver fabricated products to more distant destinations at transportation costs substantially less than when the two stages of shipment were separately considered.

Anticipatory Purchasing

About three years ago, the purchasing department instituted a study of the purchasing methods employed in the automobile industry, believing that its own requirements were sufficiently comparable that some ideas might well be adopted, or adapted, to good advantage. One such method that has worked out well in the Tractor Division is known as "anticipatory purchasing". About 150 items and parts in regular use have been placed on open-end contracts of this nature.

The way this works, the full year's requirements are estimated from sales estimates and production schedules and the contract is based upon this total quantity. Each month, an actual delivery order or release is issued for the quantity indicated by the current production schedule. At the same time, the supplier is authorized to proceed with the fabrication of additional quantities up to one or two months estimated requirements in anticipation

of future delivery orders, which enables him to fit this work into his own production schedules to best advantage or convenience. He is further authorized to procure materials, if he so desires, to cover estimated requirements for two additional months into the future. Since these authorizations are extended each month, the purchasing department has, at all times, a partial commitment up to 4 to 6 months ahead, but with a periodic review of actual requirements keeping this commitment within prudent limits.

This plan is obviously of help to the supplier in that it enables him to plan and schedule his own production on the basis of a steady backlog and maximum flexibility, and to provide well in advance for the procurement of materials with a minimum of risk and with flexibility of timing in this phase as well. However, it is primarily a policy and technique of purchasing.

The advantages to the purchasing department may be summarized as follows:

(1) It requires the making of only one "buy" or contract per item per year, instead of reopening the matter each succeeding month.

(2) It affords the opportunity of most advantageous negotiation on the basis of total quantity instead

(Please turn to page 488)

A VITAL PART OF THE MANAGEMENT FUNCTION



Purchasing in our company is the responsibility of the Director of Materiel, who is a member of our Executive Staff. He is responsible for inventory control in addition to purchasing.

We consider the importance of purchasing and inventory management to be equal to other functions of management. The maintenance of inventories at economic levels consistent with production requirements is one of the most complex functions of our business. We operate in a highly competitive market where a shortage of material may lose a valuable account. Excessive inventories that do not turn rapidly wipe out profit or result in losses to the corporation.

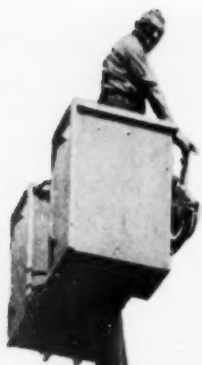
It is evident, therefore, that purchasing and inventory control is a vital part of the management function and as such plays an important role in formulation of company policies.

THOMAS WOLFE

President, Airmotive Corporation, Burbank, California

MECHANIZATION

How a Purchasing Program Is Saving Large Sums In Maintenance and Capital Outlay



J. C. Strasbourger, left, Special Assistant to the Purchasing Agent, and J. Donald Hogg, Purchasing Agent, Cleveland Electric Illuminating Company. Both are engineers.

Hundreds of uses have been found for this "Sky Lift". On light installation alone, it saves 50% in costs.



"**W**E take the stand that we are always using the second best method no matter how new it is."

These words of J. Donald Hogg, purchasing agent for Cleveland Electric Illuminating Company neatly sum up the basis of the utility firm's vigorous purchasing saving program. Applying that basic philosophy to an annual expenditure of over \$35,000,000 has brought about substantial economies and

improved operating conditions for the company.

Cleveland Electric's aim in the program is mechanization. The simple definition of the word as applied by the utility is "the science of replacing hand labor or older inefficient tools with the most efficient modern mechanical methods." In other words don't rest content with the second best method.

To implement the program of company-wide mechanization—cov-

ering construction material, general maintenance and operating equipment, and supplies of all kinds—a special committee was appointed a few years ago. It consists of the superintendent of electrical engineering and operations, the director of purchasing and stores, and general superintendent of lines. A sub-committee contains representatives of the following departments: services, lines, steam, electrical, stores, transportation and shops, and office.



Along with a paving machine, this equipment cut the direct labor cost of removing paving by 85%. In two hours, quietly, it can do the work of a week's pneumatic hammer cutting.



This scraper has brought about an overall saving of 80% in the cost of coal movement over earlier methods.



In a variety of operations, this crane, operated by power hydraulics, is saving about 19,000 manhours a year.



Railroad cars at a steam plant are moved at one-tenth the previous cost with this machine. It also helps eliminate demurrage charges, heavy labor, etc.

The purchasing department is a logical jumping off place in such a program. Buyers are in continual contact with vendors' representatives, and can most effectively obtain new information on new tools and equipment. Arrangements for demonstrations are also easily made. A big help in the program has been the strong desire of suppliers generally to cooperate in the development and application of new tools.

New ideas are also developed at the monthly sub-committee meetings. J. C. Strasbourger, special assistant to the purchasing agent, and secretary of the over all mechanization committee, is furnished with reports by the chairmen of these subcommittees. The reports outline problems or special conditions, and indicate the type of information that may be needed to solve the problem, or the new type of equipment that may be desired.

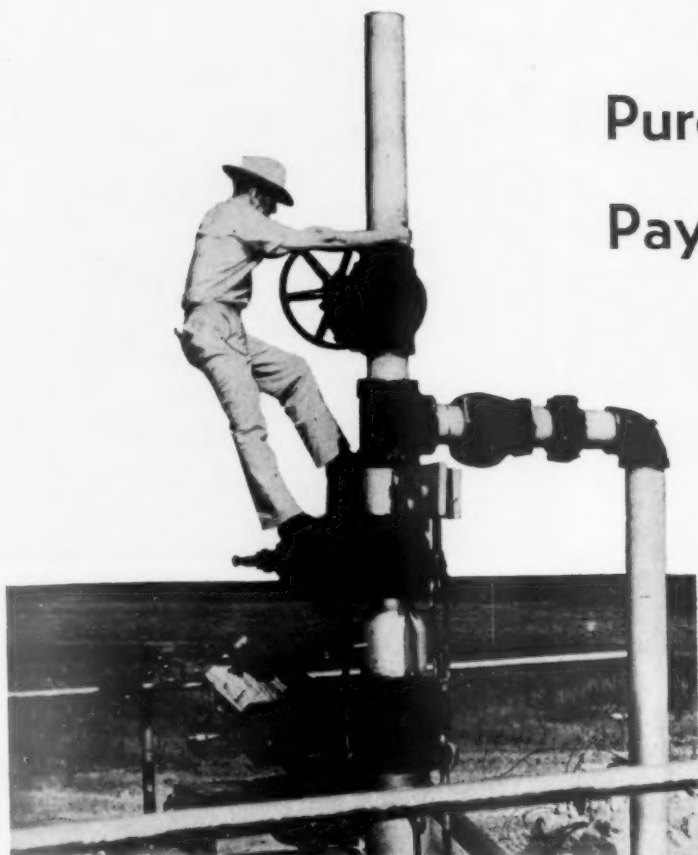
Mr. Strasbourger funnels all kinds of information on new products and new developments to interested supervisors, and gets their reactions on an inquiry sheet which contains the following questions:

"Does this device have application in operations under your supervision?"

"Will use of this device facilitate performance of the work?"

"Will use of this device increase
(Please turn to page 490)

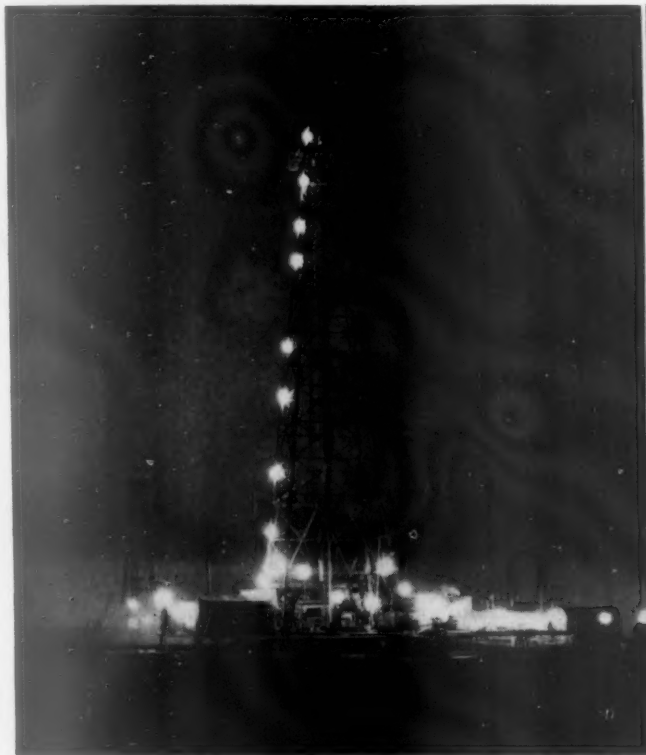
Purchase Analysis Pays Off for J. M. Huber Corporation



Valve and pipe purchases play an important part in the efficiency of this "Christmas Tree" at top of one of Huber's many natural gas wells.

PURCHASING departments at all nine operating divisions of the J. M. Huber Corporation are well grounded in the use of purchase analysis as a means toward improved products at lower cost. On these pages are listed a number of representative case histories on savings accomplished at the various divisions by competent buying, coordinated with the activities of the operating departments, as reported by Edward M. Krech, Director of Purchases. The company produces carbon black, oil, gas, natural gasoline, kaolin clay, printing inks and rubber chemicals.

A Huber standard derrick just before going into use in the Texas Panhandle oil field region.



Valves are checked at the McCook plant's bulk storage tank room. The plant has an annual capacity of 30,000,000 lbs. of ink.





Director of Purchases E. M. Krech, left, talks thing over with Hans Huber, President, at New York headquarters

DRILL PIPE: This pipe, used in oil and gas well development, is listed as an equipment investment. We have approximately \$100,000 invested in this item. We used to purchase plain end drill pipe, ship it to Houston for installation of tool joints, then reship it to Borger. We adopted a Jones & Laughlin integral joint drill pipe on which tool joints are installed at the mill and shipped direct to the user. Present cost under the old method on 4½" pipe is \$416.29 per hundred feet, f.o.b. Borger. Cost of the integral joint pipe is \$376.99 f.o.b. Borger, for a saving of \$39.30 per hundred feet, or more than 10% saving.

VALVES: A few years ago we switched to factory shipments of valves where time would allow. In 1952, which was a low purchase year for us, we bought \$18,000 worth of valves. Purchased out of stock they would have cost us approximately \$20,800. We saved 15.6% on invested dollars.

TONG DIES: We have been buying these dies two dozen at a time for \$1.38 each. Our next order will be bought in six gross lots at a cost of \$1.13 each—a reduction of 25 cents per die or a saving of 18% on invested dollars.

MIKRO SCREENS: Screens used in our mikro pulverizing equipment in all carbon plants were purchased in 50 to 100 lot quantities at \$3.25 each.

The supplier's hardening process was quite expensive. We asked for trial use of a small quantity of unhardened screens, which were found to fit our application better. The old method of hardening caused the screens to warp, and the factory had to straighten the warpage manually, which left marks on the sides. Tests showed that the unhardened screens lasted just as long as the hardened ones. By raising our volume purchase, we now buy this item for \$1.15—a saving of 64.6% on the invested dollar.

OIL FIELD FITTINGS: In 1952, we spent \$12,615 for fittings, practically all of which were bought at factory prices. If bought at out of stock prices, they would have cost us \$15,642.

MULTIWALL BAGS: A three-ply sewn valve bag had been used to ship 50 pounds of one of our products to domestic customers. Purchasing, cooperating with production, and with our suppliers, changed the package to a two-ply pasted valve bag with the same basic weight and the same capacity. Saving on the change amounts to \$20,000 per year—and we have a better shaped package with greater scuff resistance.

CARDOOR CLOSURES: We are using a 48" x 96" 350 lb. test double wall three face cardoor closure. We

are switching to a 250 lb. high strength kraft in a single wall carliner. The former costs \$683.40 per thousand, the latter \$432.95, a saving of over 36%.

MAKE vs. BUY: Questioning whether to buy a manufacturing intermediate rather than make it led to an investigation of raw material and processing costs. The study resulted in the subsequent purchase of the material at a saving of 10% on the unit cost. This in turn led to better materials handling, plus the \$6,000 cash saving effected by outside purchasing.

SOLVENTS: During the year we saved 15% in the use of two organic solvents by changing from the use of drums to bulk handling. A cash saving of \$5,000 a year was made for the year, as well as savings in floor space and handling time.

BEARINGS: We had been purchasing a certain bearing for use in our rotating head at a cost of 87 cents each. In conversations with another supplier we found we could get a comparable bearing at a cost of 67 cents each, and we made the change. In this connection, it is to be noted that we have been instrumental in getting all equipment put into manufactured products for resale at the factory price for resale, which is considerably lower than when purchased for direct use.

When Management Knows the Profit in

PURCHASING'S obligations to management are the subject for many articles, association discussions, and company pep talks. The theme is a natural one, when you consider how a company can benefit from good purchasing—and suffer when it's not so good.

At Sargent & Company, New Haven, Conn., however, this aspect of the management-purchasing relationship is looked at from another angle. The nearly century-old distinguished New England builders' hardware and tool maker already

knows the profit potential in purchasing. Now it's concerned about its obligations to purchasing to bring that potential to practical effectiveness.

Sargent is succeeding in this new approach. Backed by an 11-point set of principles laid down by management, an able purchasing group under the leadership of purchasing agent William N. Larkin is carrying out an aggressively cost-conscious buying program that is paying off with substantial savings for the company.

This unusual purchasing "bill of rights" was recently outlined at a local association meeting by Herman R. Giese, Sargent's vice-president and works manager.

A condensation of Mr. Giese's main points appears on the next page.

Purchasing agent Larkin and his staff translate that specific support into savings by two methods of profitable purchasing. In the buying of raw materials that go into Sargent locks and hardware, there is not the opportunity for savings through

Mr. Larkin and Mr. Giese discussing latest projection of manufacturing requirements. About \$6,000,000 is spent annually on materials and supplies.

Loyal, cooperative suppliers are essential to Sargent's purchasing program. Here buyer, Walter C. McCaughey goes over a point with J. T. Blinn of Hawley Hardware Company, New Haven.



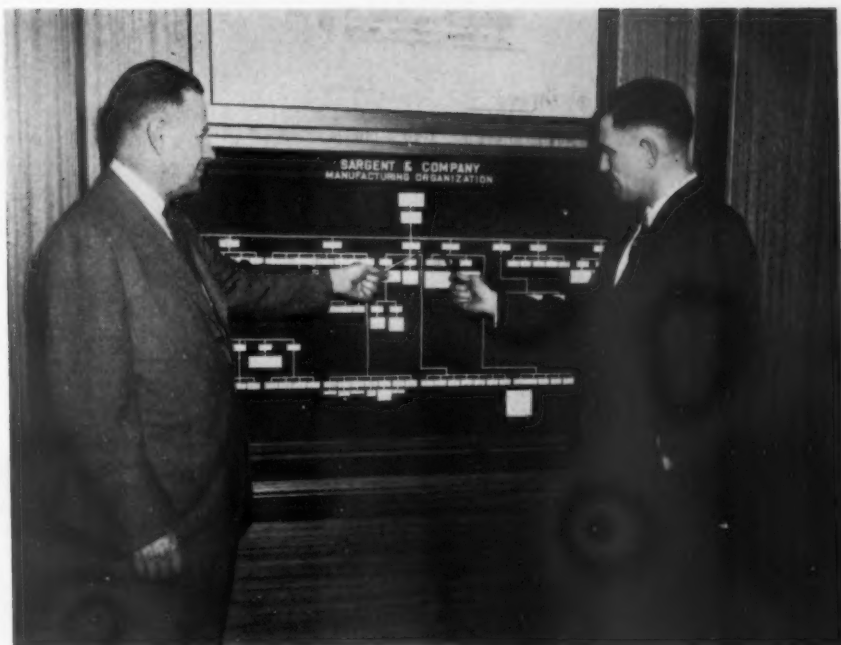
Purchasing

value analysis that exist in larger, more complex products calling for hundreds of component parts. Pig iron, steel and brass mill products are relatively standard items, sold at published prices.

Sargent saves on raw material purchases through a tightly controlled buying plan based on projections. These in turn are based on an average use in past periods, orders on hand, sales forecasts and similar indicators. The basic theory behind the plan is that it is not purchasing's function to tie up money in inventory, but to carefully synchronize material deliveries with production schedules. Production control turns over its projections to purchasing which buys the metals on the basis of "one month ahead of fabrication, two months ahead of shipment." Raw materials for screw machines are bought 60 days ahead.

Since production schedules fluctuate, the six-months projections are subject to many changes. This requires a flexible, efficient buying organization that can cover needs, yet avoid "loading up." A hard working purchasing team, aided by cooperative and loyal suppliers, has enabled Sargent to stay on top of the raw material situation and maintain a good competitive position. That is a phase of profitable purchasing difficult to express exactly in dollars, yet it is of vital importance. As expressed in a department report on cost reduction, "the most important (saving) of all is—having what is needed when it is needed and in the quantities needed"—an absolute necessity in a highly competitive field.

Analyzing for value, testing for substitutes and negotiating for more



Vice President Giese (left) explains to Purchasing Agent Larkin his theories on. . . .

What Purchasing Should Expect from Management

1. The purchasing department is entitled to the complete confidence of management in its integrity, ability and judgment. If you do not enjoy that confidence, then both you and your management are in error.
2. The purchasing department is entitled to know, and have spelled out most definitely the extent of its responsibilities.
3. The purchasing department must be given complete authority and freedom of action within the bounds and limits of the responsibilities previously agreed to.
4. It is not in the best interests of the purchasing department, or any other department head, to have decisions made for him by anyone else. The final decision, after talking out a problem, must be made by the man who is charged with the responsibility.
5. The purchasing department is entitled to non-interference with purchasing prerogative by members of top management or any other person within the organization.
6. The purchasing department should be equipped with clearly defined purchasing policies, so that it can act with confidence, and with definiteness, in dealing with suppliers in all problems in which a matter of policy is involved.
7. It is vital and essential that the purchasing department have complete information as to the overall plans and policies of top management.
8. The purchasing department should be represented in all production councils. It is necessary that purchasing have complete equality in status with the other major divisions of the operation.
9. The purchasing department must be given the opportunity to bring to the attention of not only top management, but others in the organization, the many means for the reduction of costs that come to its attention through its contact with various suppliers with whom it deals.
10. The purchasing department must be given the opportunity to convey to top management information that it is constantly receiving which has a bearing on general business conditions.
11. Management must recognize that the actions of a purchasing department have an important and direct effect on the public relations of a company.



R. E. Davis buys purchased parts, shipping supplies.



James J. Doheny buys all Sargent's raw materials.

favorable supply sources are more adaptable to the purchase of supplies, and produce more specifically measurable savings. Here are a few typical examples of how analytical purchasing paid off in the past year:

- Sargent was paying a total of \$.3033 a gallon (including transportation costs) for cutting oil, until purchasing decided to switch from drums to bulk shipments. That move alone brought the price to \$.2225 a gallon, for a yearly saving of \$3,657 on the purchase of 45,000 gallons. Now an arrangement is being worked out where the supplier will install storage equipment, to be amortized over a year's time by adding to the price of each shipment. With everything, including amortization, Sargent is still saving two cents a gallon, and will revert to the eight cents a gallon saving at the end of a year. A great deal of laborious handling has been eliminated and safely increased. Later, a cutting oil purifying system will be tied in with the storage installation, leading to even greater savings.

- Five vendors had been supplying 14 types of buffs for several years—without anyone questioning the set routine. Working closely with two buff suppliers, a buyer figured out that half that number would serve the company just as well. The change was made to the smaller

number in close coordination with the finishing department foreman and the finishing engineer. Both men recognized the value of standardization and simplification and co-operated enthusiastically. Now, any needed buff can be bought from either of the two suppliers, who know Sargent's requirements precisely. Savings in the polishing department alone due to this change amounted to \$2,500.

- In a discussion with a representative of a bearing supplier, a buyer determined that a stock size bearing might just as well do the job then being done by a special sintered item. Price for the special was \$14.00 per thousand, for the standard part \$7.02 per thousand. The suggested replacement was cleared with engineering, and Sargent is now saving \$2,100 annually.

- When he came to purchasing from the production department, Mr. Larkin got management's approval for a plant-wide study of packaging, with a view to standardization. An engineer with packaging experience was assigned to assist, and an outside expert in packaging design completed the team. After four to six months study, the group was able to recommend that 76 sizes be discontinued, 35 added, and 17 changed to standard models. In some, it was only necessary to re-

arrange dimensions to use less board, and in others an additional increase permitted use of the box for a greater variety of items. Total savings from this packaging study amounted to \$16,000 in one year. Mr. Larkin is now chairman of the company packaging committee, which includes representatives from sales and advertising, engineering and production. Every type of packaging used is being constantly subjected to review for the purpose of lowering costs and increasing serviceability.

But it's the future, rather than the past, that's emphasized at Sargent and the prospect is for more and more analysis, more and more concentration on getting the same job done in a better way at lower cost. One project now in the early stages is that of saving almost \$4,000 a year on pig iron purchases by means of eliminating unnecessary freight charges.

Even in the relatively smaller savings—\$850 yearly through a switch to bulk buying of safety gloves, or \$500 yearly by using a less expensive but just as satisfactory SAE lubricating oil—the essential principle in Sargent's approach to cost-cutting remains the same. As Mr. Larkin puts it, "We never stop questioning the old way, regardless of how small or unimportant it seems."

Ideas that will work for YOU

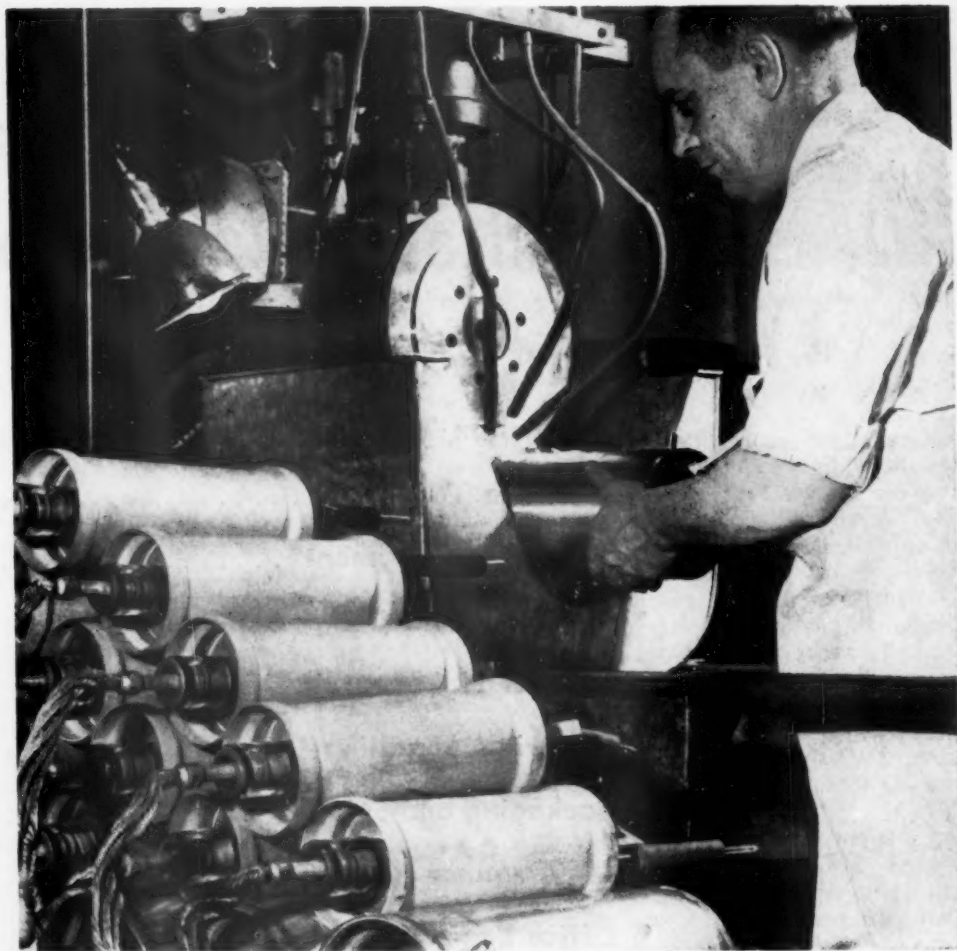
250 Case Histories of Profitable Purchases

- Production Tools and Equipmentpage 112
- Machine Toolspage 125
- Electrical Equipmentpage 131
- Materials and Componentspage 136
- Product Finishingpage 150
- Materials Handlingpage 156
- Packaging and Shippingpage 166
- Maintenance and Safety Suppliespage 174
- Office Equipment and Suppliespage 212

Additional Cost Saving Case Histories
Will be Found Beginning on Page 380

Profitable Purchases:

Production Tools and Equipment



THE broad field covered by production tools and equipment provides a rigorous testing ground for the purchasing man's skill and imagination. As indicated in the following reports, opportunities for cost savings through new products or through new application of already established products, appear almost unlimited. A well informed purchasing department, with a knowledge of the latest technological developments is in an excellent position to initiate such savings, because of its constant contacts with markets and vendors, and its ability to recognize new ideas and their profit possibilities for the company. Creative buying is essential to any attempt at lowering production costs.

Production Tools and Equipment

Multiple Nut Runners Save 70% of Assembly Time

Automotive differential carrier assembly involves six operations. A line using six multiple nut runners was set up. One man used to put bearing caps on at the rate of 160 units per hour—now he does 330 units, and a second man is no longer needed to check torque. Ring gear sub-assembly with 10 cap screws was done at 100 units per hour—now production is up to 350 units—again with torque checking eliminated. Removal of bearing caps was done at rate of 120 units per hour—the nut runner turns out 250 units per hour. Introduction of the multiple nut runners on this series of operations has cut the production time per unit by 70%.

COST SAVING ITEM—1



Higher Production With Fewer Taps

Manufacturer formerly using 500 special taps per month on a special nut tapping job, now uses 35 specially engineered taps. Previously, average production from set of two roughing taps was 1,000 pieces, and total production per 8 hours was less than 10,000 pieces. Now, same machine runs three spindles with single pairs of special taps which run three days between sharpenings, and average six sharpenings apiece for a total production of 90,000 pieces per tap. Production is 15,000 pieces per 8-hour day.

COST SAVING ITEM—2

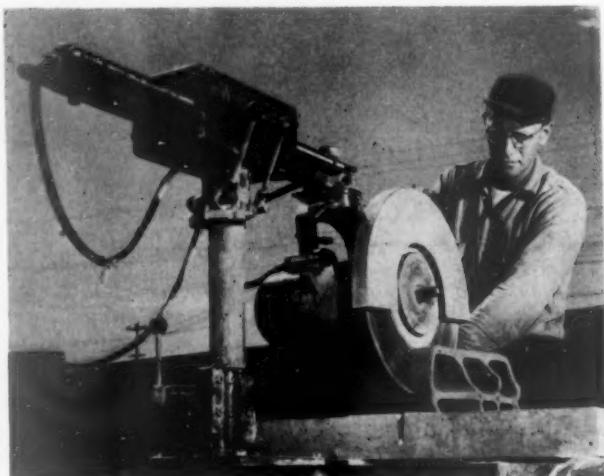
Twice As Fast As Previous Machine

A 200 hundred ton press installed by Mercury Manufacturing Company, Chicago, is used for making forgings, for stamping and for plate forming. Its capacity, speed and flexibility advantages make it twice as fast as the mechanical bulldozer formerly used for some of the work; work is better because of better speed control; maintenance is negligible.

COST SAVING ITEM—3



Production Tools and Equipment



Radial Saw Saves \$8,000 in Three Years

By using a radial saw with a diamond cutting wheel, the Pacific Telephone and Telegraph Co., Seattle, Wash., saved \$8,000 in less than three years in cutting expensive 4- and 6-duct conduit tile. It salvaged as many as 4,000 tiles.

COST SAVING ITEM—4

Saves \$100 In a Day

Taller and Cooper, Inc., makers of electro-mechanical measuring and recording devices salvaged \$100.00 worth of tapered plug gages in one day by chrome plating them back to size in an industrial chrome plating unit. This was accomplished in a matter of minutes.

COST SAVING ITEM—5



Press Increases Production 33%, Reduces Number of Operations

Installation of a new 50-ton press with dual hand lever controls has increased production 33% at the Hudson Tool & Die Company, Newark, N. J. The press is used for the deep draw of bronze housing, and has reduced the operation from six draws to three. In addition, the tooling is easier to change than on former machines used for the job. Unskilled operators start off the first day producing perfect parts. When operating the press, both hands are occupied on the dual hand levers, so hands and fingers cannot get near the moving ram.

COST SAVING ITEM—6

Production Tools and Equipment



Welding Torch Saves 25% In Gas Consumption

Use of an inert-arc welding torch has saved at least 25% in gas consumption over previous equipment used at the McGregor Mfg. Corp., of Birmingham, Mich. In addition, downtime for adjustment of tungsten electrodes has been reduced and consumption of the tungsten has been curtailed due to more efficient gas consumption through new nozzle design. The welder is used for fabrication of power recovery turbines for aircraft engines.

COST SAVING ITEM—7

Worm Gearing Saves \$17,500 Yearly Increases Furnace Output 10%

Worm gear speed reducers on a crane and conveyor parts loader of Commonwealth Industries, Detroit, have increased furnace output 10% and saved \$17,500 in labor costs in one year. These worm gear units do their work under heavy loads, continuously or intermittently, no matter how severe the conditions, and with a minimum of attention.

COST SAVING ITEM—8

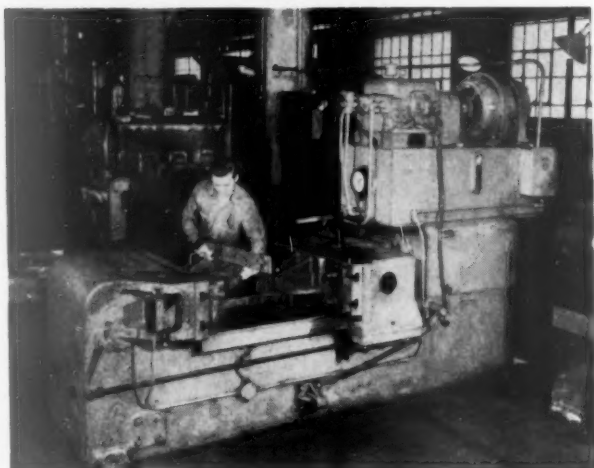


One Employee, Part Time, Replaces Three at Full Time

Better quality control and reduced testing costs have resulted from the use of an electronic metals comparator at a large Cleveland automotive plant. The metals comparator, designed to detect and indicate variations in hardness of metals by measuring differences in magnetic characteristics, is used to test universal trunnion yoke bearings. Where previously it took three employees, working full time, to keep the test line moving at the rate of 1,000 bearings an hour, it now takes one girl to do the job working part time.

COST SAVING ITEM—9

Production Tools and Equipment



Production Up 50%; Time and Labor Down 33%

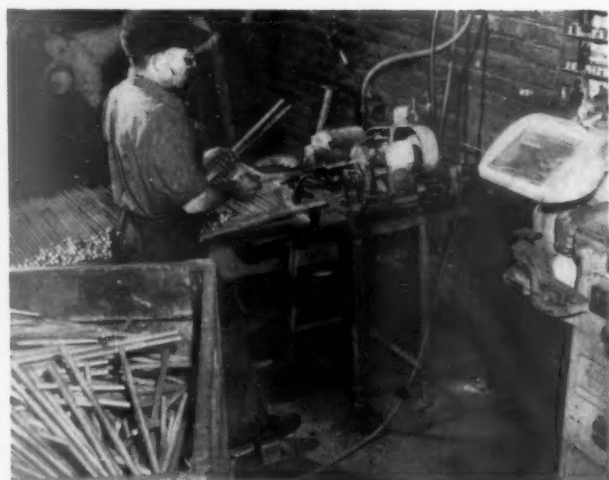
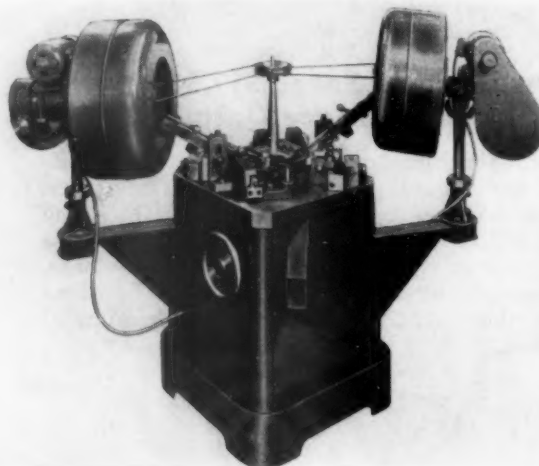
Steel bars used in various products by Otis Elevator Company, New York had been heated and bent while hot before installation of this press. Now bars can be bent cold, bringing about an increase in production of 50%, and an estimated reduction of 33% in time and labor costs. The finished product is said to be superior to the one obtained by the old method.

COST SAVING ITEM—10

Planetary Thread Rolling Cuts Costs

Tru-Fit Screw Products Corp., Cleveland, Ohio, has a bonus system for its employees which reached a potential of 50% of the normal rate when the company installed a planetary thread roller. Despite the extra bonus rate, the average actual costs for the screws run on the machine was 10.3¢ against a cost of 23.5¢ on a late type reciprocating machine. The savings in manhours per thousand pieces is 65% while the die cost is a constant 2½¢ per thousand compared to 1½¢ per thousand on the reciprocating machine—a minor increase compared to the overwhelming savings involved.

COST SAVING ITEM—11



End Finishing Done 40% Faster

In a large farm equipment plant, a wide range of steel rod pointing work is currently being handled 40% faster on a new bench-type end-finishing machine. Direct labor costs per 100 pieces have been reduced from 51¢ to 23¢ over work performed on a threading lathe. The operator's hands are free at all times for faster stock handling and loading. Multiple cutters reduce the machining cycle, and an automatic swing-type stock stop enables fast positioning of the work.

COST SAVING ITEM—12

Production Tools and Equipment



Micrometer Saves Costly Parts

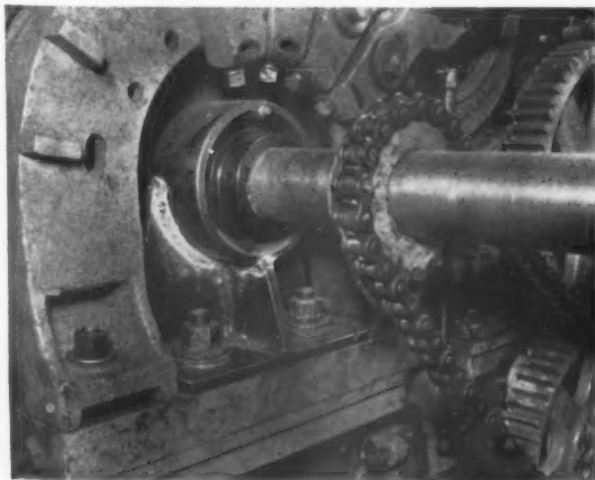
An entire lot of 72 finished parts tested with fixed gages was marked for rejection and on the way to the scrap heap. A new internal tri-point micrometer which measures holes and bores from .275" to 8" revealed, however, by accurate measurement that 59 pieces came well within prescribed tolerances and that variances in the remaining 13 pieces were so slight that all were acceptable. This micrometer, which actually does measure hole and bore sizes accurately saved the entire lot of 72 pieces.

COST SAVING ITEM—13

Portable Saw Saves \$193.20 on First Job

A tough cutting problem was encountered by the Southern Dyestuff Corp., of Charlotte, N. C., while constructing a chlorination column at their plant. The problem was to cut and fit 12 sections of 24" diam cast iron pipe, $\frac{3}{4}$ " thick. To cut this material on a lathe would have cost \$240.00. Instead it was cut with a portable saw at a cost of \$46.80, a saving of \$193.20 on the saw's first job.

COST SAVING ITEM—14



Change To Pillow Blocks Cuts Lubricant Use

By converting their garnetts from sleeve bearings to ball bearing pillow blocks and cylindrical cartridges, a New York woolen company was able to change their lubricant consumption from four to five 55 gallon drums of lubricating oil per month to a once-every-three month grease lubrication schedule. In addition, they eliminated the loss of textile stock from oil drippings, minimized time and labor for relubrication, reduced power consumption and achieved quieter, smoother machine operation.

COST SAVING ITEM—15

Production Tools and Equipment



Cut Manufacturing Costs 90%

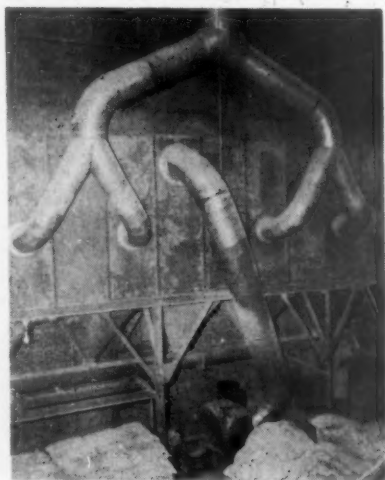
Sellstrom Manufacturing Co., Chicago, Ill. producer of industrial eye and face protectors, uses plastics molding presses to make welding goggles and parts for welding helmets. Automatic welding on these presses has brought the company's manufacturing costs to one tenth those incurred when making goggles by a previous method. Two cup-type welding goggles are completely molded of thermo-setting plastic compound on a 15-ton fully automatic press. A 50-ton hydraulic press is used on other parts.

COST SAVING ITEM—16

8-Hour Job Reduced To 54 Minutes

Combustion Engineering-Superheater, Inc., E. Chicago, Ind., found that by using a lightweight stud welding gun an operator installs $\frac{7}{8}$ " diam studs at a rate of 4 to 5 per minute—at least 10 times faster than the former fastening method used. As a result, one man working in one spot has released the equipment and manpower previously required for the handling of 96 separate drilling, tapping and setting operations. The studs are end-welded on the mounting flanges of a large coal pulverizer casing.

COST SAVING ITEM—17

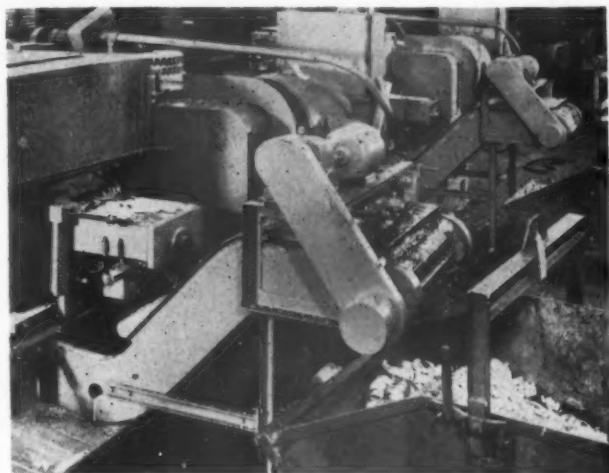


Dust Collector Saves \$45.00 a Day

An eastern roofing manufacturer using a cloth-tube-type dust collector ventilating a scrap recovery system saves \$45.00 per day. About 3,000 lbs. of dusty material produced by a scrap recovery operation are recovered each 24 hours and reintroduced into the manufacturing process. Besides keeping the work areas free and yielding a return from the recovered valuable products, this collector saves fuel since the filtered air is always clean enough to be returned to the plant.

COST SAVING ITEM—18

Production Tools and Equipment



Chip Removal Conveyors Eliminate Shut-Downs

By continuously removing the large volume of chips generated by automatic lathes, Thompson Products, Inc., of Cleveland, Ohio, found it could eliminate periodic shut-down for manual scrap removal and assure uninterrupted operation of its high production machines. In the scrap removal installation, the receiving end of the chip tote conveyor is located directly beneath the lathe's tooling. Chips fall onto the hinged steel belting and are carried clear of the lathe's operating mechanism up an incline to tote boxes.

COST SAVING ITEM—19

Belt Polisher Life Doubled

Plastics Research Products Co., contract moulders of plastics, has found that using a dresser on a horizontal belt polisher for plastic radio cabinets approximately doubles belt life. The new dresser can also be used on an upright belt grinder with a 6" by 48" grit belt for miscellaneous work giving increased belt life. Faster stock removal and up to 75% increase in total stock removed during belt life also result from use of the dresser.

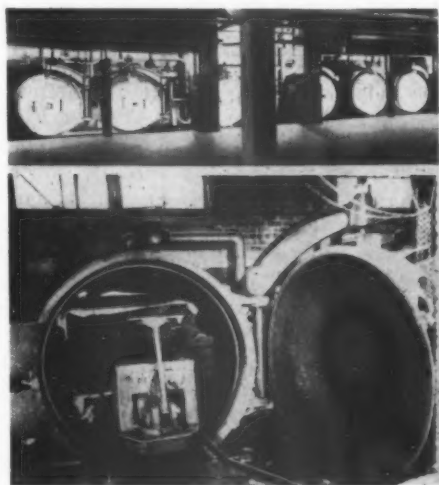
COST SAVING ITEM—20



Door Opened in Seconds Instead of 30 Minutes

The conventional door on pressure vessels is held shut by a large number of nuts and bolts and to open the door all the nuts must be removed. This task takes at least 20 to 30 minutes. A quick-opening door has been developed that can be opened or closed by expanding or contracting a split ring. By use of the new type door, one manufacturer in the rubber industry cut the time required for opening or closing the doors on vulcanizers from 20 minutes to 30 seconds, thereby boosting production. The doors have been built to withstand temperatures of 400 F and pressures up to 300 psi.

COST SAVING ITEM—21



Production Tools and Equipment



Driver Saves \$6,900 A Year

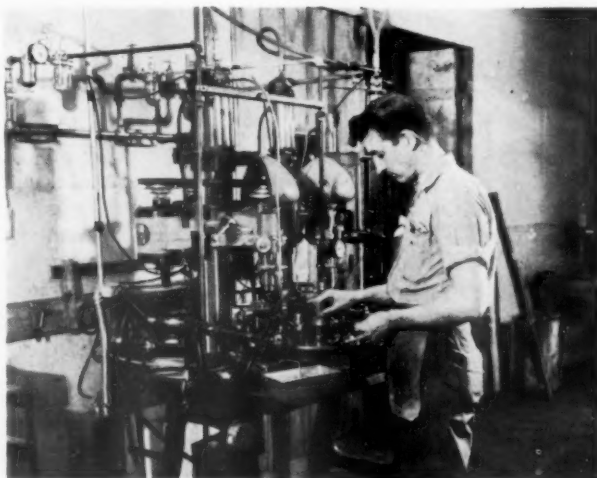
The Alsco Michigan Corporation makes aluminum storm windows and doors. By using portable electric drivers that only cost \$80.00 each, the company cut production cost 29% and saved \$6,900 the first year.

COST SAVING ITEM—22

Specially-Built Machine Boosts Precision Parts Production 350%

A machine built specially by Ostby & Barton Company, Providence, R. I., for its own use has increased production of electrical connector sockets made of naval brass by 350%. Each socket has a hole, which is too deep for one pass, and the precision demanded is greater than normal. Formerly, the holes were drilled manually, with a single spindle drill press, and it was difficult to maintain the accuracy demanded. The special machine consists of a rotary feed table to position the parts, and three drill press feeds, electrically synchronized to the movement of the table, which advance the drills as the parts come into position. An air motor maintains accuracy of indexing of rotary feed table. Production has jumped from 240 to 1080 per hour.

COST SAVING ITEM—23



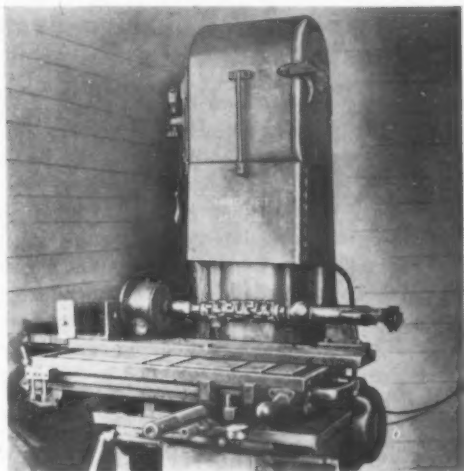
Machine Set-Up Doubles Welding Speed On Thin Aluminum

Employing the inert-gas-shielded tungsten arc process on a machine basis, the Suckle Electronics Company, of Camden, N. J., is turning out 45 aluminum case boxes a day. Mounted on a track-guided carrying machine, the torch is carried over two sections of the box which is held in a special jig. Progression rate is 18" per minute, enabling completion of a 15" long seam on 1/16" thick aluminum in approximately 45 seconds. This is twice as fast as a manual operation. Then the box is turned over and, by merely flicking a switch, the carrying machine is reversed and returned to its starting point, completing the second seam in the process.

COST SAVING ITEM—24



Production Tools and Equipment



Abrasive Belt Grinder Increases Production 244%

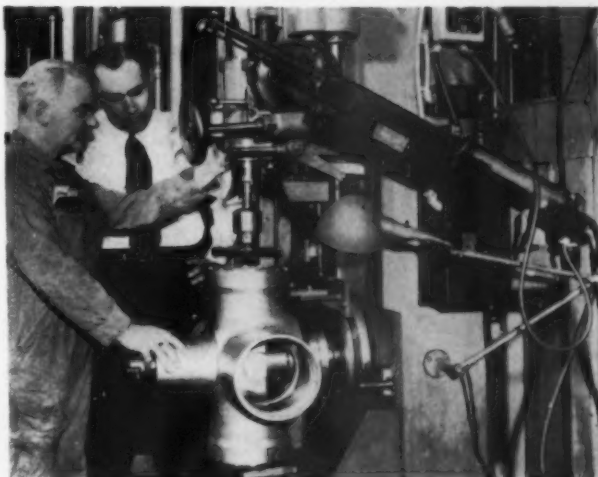
Rocket grids of Meehanite cast-iron originally required two operations to grind off surface scale and finish the OD of three legs, at the eastern plant of a well known manufacturer. The old method of turning on a lathe, which left tough burrs that had to be removed by hand, resulted in 450 pieces per hour. Grids are now assembled on an arbor which is rotated by a small electric motor and ground against an 8"-wide abrasive belt. The belt dissipates frictional heat, thereby eliminating formation of burrs. This setup increases production up to 1,100 per hour.

COST SAVING ITEM—25

Drill Press, Converted Into Brushing Tool, Saves Manufacturer \$20,000

By converting a drill press into a high speed production brushing machine, the Propeller Division of the Curtiss-Wright Corporation saved nearly \$20,000 in equipment and considerable time getting into production on an operation vital in the manufacture of their variable pitch propellers. To improve the finish on a small bearing area in the hub of the propeller, a wire brush was mounted on a drill press equipped with an air operated ram and timer. Normal operation would have required a honing machine, expensive tools and other fixtures that would have cost nearly \$20,000, and valuable time when production was necessary for defense purposes.

COST SAVING ITEM—26

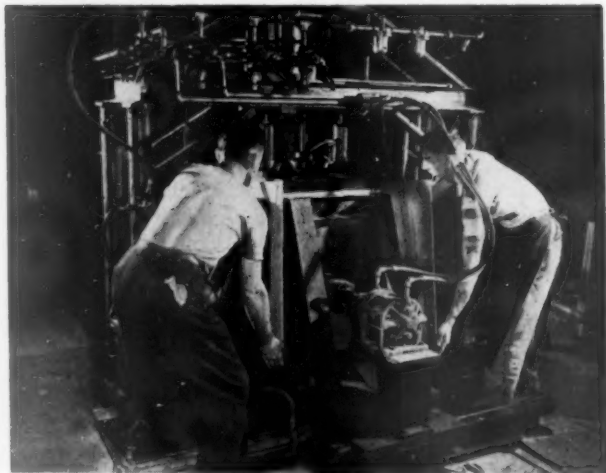


High Speed Ground Tool Bits Excel Cobalt Steel Bits

Shop No. 701 of the Naval Ordnance Test Station, Pasadena, Calif., tested a certain make of high speed ground tool bits and reported that they perform at, or slightly above, the level of higher classed cobalt steel bits. These bits stood up extremely well on heavy hogging cuts using heavy feeds and fairly high surface speeds — .040 to .050 feed and 120 to 140 fpm on steel hogging. On heavy cuts the edges of the bits hold up well, retaining their keenness sufficiently to get good finishes on succeeding light cuts.

COST SAVING ITEM—27

Production Tools and Equipment



New "Two-Part" Adhesive System Boosts Production 150%

The Crosley Division of the Avco Manufacturing Company has boosted its television cabinet production as much as 150% through the use of a new patented process for joining veneer plywood paneling to steel frames. The process, known as a "two-part" adhesive system, calls for a dip coat of an adhesive on the metal chassis, and a spray coat of another adhesive on both the metal chassis and the wood veneer. The frames are air dried; the panels are heat dried under lamps. About three minutes in a special press produces a finished cabinet.

COST SAVING ITEM—28

Belt Grinder Doubles Tubing Output

A manufacturer of carbon steel tubing previously needed five operations to grind the tubing to a high finish prior to buffing and plating. Production was 275' per hour. The job was transferred to a centerless abrasive-belt grinder with a 100% increase in production. First pass was made with No. 180 grit, second pass with No. 220 grit. This method not only eliminated three operations, but also produced a far superior finish.

COST SAVING ITEM—29



Contour Cutting On Band Machining Tools Increases Production 100%

Contour cutting on band machining tools has increased production 100% for the Surface Combustion Corporation of Columbus, Ohio. Formerly the company used a power band saw to cut away the entire side of a circular, aircraft heater spinings and then cut a narrow strip from the waste material which was welded back to the edge of the spinning. Now the job is done in one operation. In addition to the greater production, saw blade life has increased 75%, man hours have been reduced by eight per day at a savings of \$16.24, and material savings amount to 5¢ on each spinning turned out.

COST SAVING ITEM—30

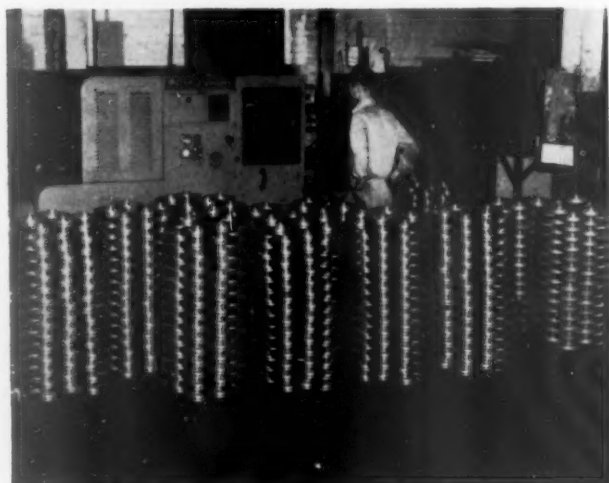


Machine Tools



AUTOMATION in industry is more than desirable—it's rapidly becoming a necessity in the face of continually rising break-even points. One of the most effective methods of increasing output at lower cost through automatic means is proper use of the machine tool, the backbone of our mass production system. With delivery schedules improving, and competition growing, the machine tool buyer has increasingly greater opportunities to obtain better machine tools with higher potentials for saving time, money and labor. Case histories on the following pages illustrate how machine tools have already brought outstanding advantages to users.

Machine Tools



Single Spindle Automatic Increases Output 85% to 243%

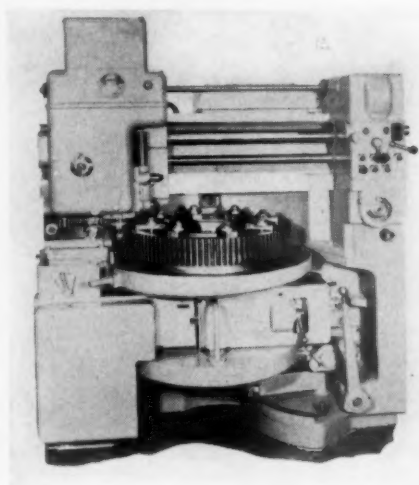
The Golden Foundry Co., Atlanta, Ga., had been machining pulleys as a service to their customers. This was a time consuming operation with a low margin of profit. Golden was about to refuse orders for these items and put its machines to other more profitable jobs, when they heard about a single spindle automatic. The company purchased one and put it to work on the pulley jobs. Production increases of 85% to 243% over the old hand method were the immediate result.

COST SAVING ITEM—31

Cutting Oil Increases Hob Life 20%

It was found that, in cutting involute teeth on alloy steel gears with Gould and Eberhardt hobs, hob life was increased 20%, when using a special type of cutting oil. In addition, scuff marks were eliminated on gear teeth and hob grinding costs were reduced. The outstanding results achieved with this cutting oil were due to a special process of combining sulfur, providing greater sulfur activity over the entire range of the cutting operation.

COST SAVING ITEM—32

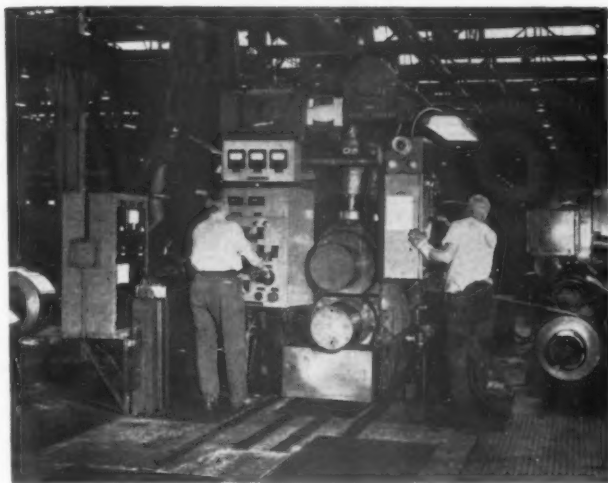


Production Per Cutter Life Up 233%

Until a well-known mining machinery manufacturer changed his cutting oil, gear cutter life span was never more than 15 gears, and often less. After changing his cutting oil, cutter life jumped to 50 gears—an increase of more than 233%. In addition, 0.005" less stock had to be removed on tool regrinds, and the transparency of the new cutting oil made inspection easier and reduced rejects. Cutter costs were also substantially reduced.

COST SAVING ITEM—33

Machine Tools



Two Mills Do the Work of Five

Higher production, closer tolerances and less equipment have all been achieved by the installation of two new mills at the Chase Metal Works plant of Chase Brass & Copper Co. Chase wanted mills that would take a 50% reduction on brass strip at 500 fpm; and auxiliary equipment to handle coils weighing 200 lb per in. of width. A pair of two-high mills, one 16" x 16" and the other 20" x 20" were designed and built to suit various widths. Now quality and quantity of output from these two new mills exceed that of five old mills.

COST SAVING ITEM—34

Valve Body Production Up 500%

A large aircraft manufacturer has made production gains of more than 500% in the manufacture of valve components by equipping with new automatic screw machines. With capacity for larger diameter stock, higher spindle speeds and wider range of threading ratios, these machines require minimum operating attention and are faster to set up than those previously used.

COST SAVING ITEM—35



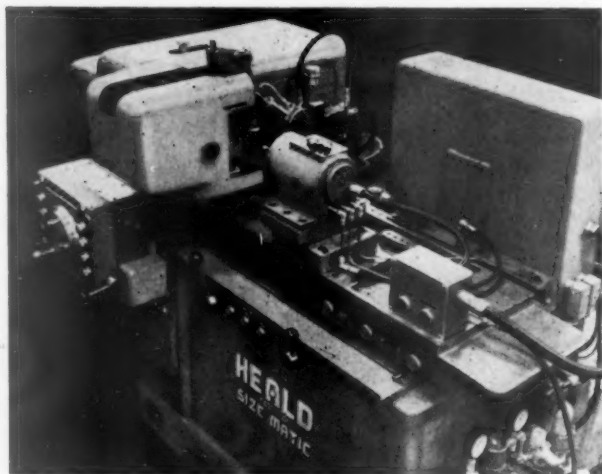
Hydraulic Lathe Cuts Machining Time 75%

A new hydraulic 60" roll lathe has been developed to effect time savings of 75% where substantial rough machining is required. The first commercial unit is for shipment to the Fairless Works of U. S. Steel Co. The lathe also permits the machining of very hard rolls which formerly could be surface-conditioned only by grinding. These benefits are obtained by providing hydraulic pressure and control for the movement of the cutting tool and of the tail stock, and by giving the cutting tool continuous traverse from left to right and vice versa.

COST SAVING ITEM—36



Machine Tools



Valve Parts Made Without Scrap

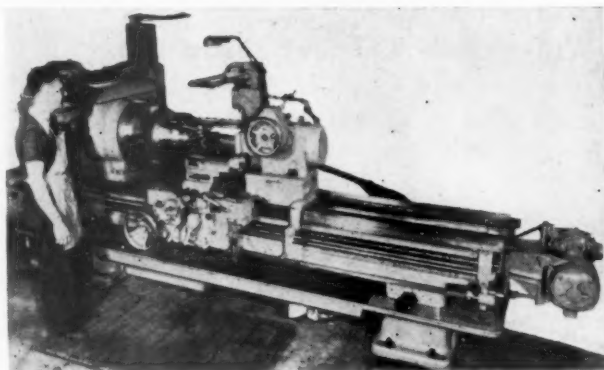
Formerly valve parts were processed with excessive scrap. A leading manufacturer installed a centerless grinder which reduced scrap to a negligible amount and at the same time increased production to one piece per minute. Other improvements were in surface finish, improved concentricity and no taper in bore. With the new machine, workpieces are loaded into a magazine feed and are carried into the machine by a gravity chute where they are automatically loaded, ground and deposited in unloading chute.

COST SAVING ITEM—37

Production Increase — 186% Time Saving — 65%

Using a hollow spindle lathe, a Canadian manufacturer has increased production 186% and saved 65% in time, in turning heavy steel spindles. Rough and finish turned inside and out, the heavy cast steel spindle comes down to 170 lbs. finished weight with .0015" tolerance on diameters, $\pm .0005$ " on bearing diameters. In second operation, work is turned end for end and the small end of workpiece inserted in the hollow spindle. Floor-to-floor time for complete turning and boring used to be 20 hours minimum—now it is only seven hours.

COST SAVING ITEM—38

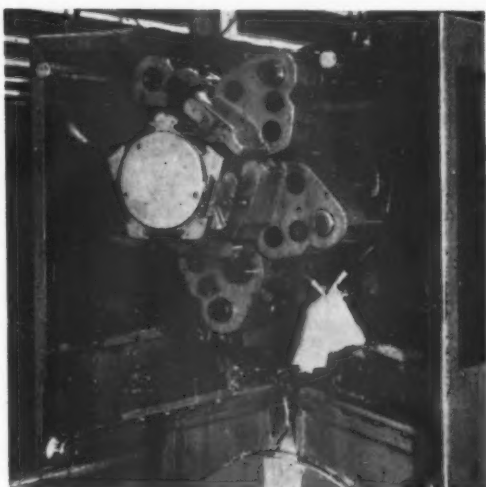


Hob Life Increased Over 100%

An eastern manufacturer, using an automatic hob shifter, has increased the number of pieces per hob sharpening from 103 to 233. In addition, the time saved by the elimination of manual shifting and the reduction in the number of sharpenings has resulted in a 65% reduction in tool costs. The saving is typical of what can be accomplished by shifting the hob a pre-determined amount after each cutting cycle rather than by manual shifting after several pieces.

COST SAVING ITEM—39

Machine Tools



Automatic Chucking Machines Increase Production, Reduce Costs

Automatic chucking machines installed at Walter Kidde & Company's Belleville (N.J.) plant have effected substantial increase in production and greatly reduced labor costs. The cost ratio on finished parts is 3.5 to 1 in favor of the new machines. Turning and chucking operations on nine different parts, formerly done on turret lathes, are now performed on the new equipment and represent a wide variety of operations. Turning heads and cross slide cutter blocks, for combining turning and boring cuts, perform five separate sets of operations automatically on these machines.

COST SAVING ITEM—40

Machine Saves 50% In Time and Labor

Ingersoll Milling Machine Co., replaced three single-table standard type grinders with a new improved type of grinder. The time required to rough grind blades is now 50% less than with the replaced machine. On many classes of work it was found that one operator with the new machine could turn out as much work as was formerly done by two machines and two operators. A wide variety of blades and shanks can be ground on the machine with stock removal ranging from .020 to .200.

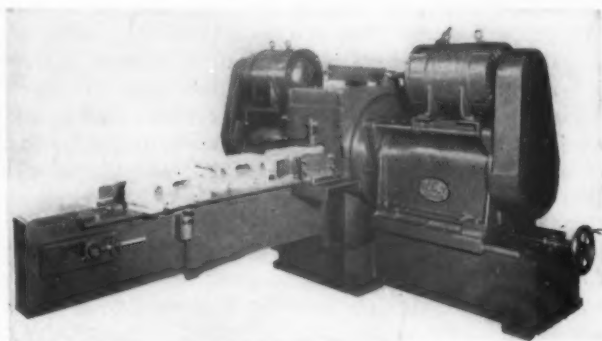
COST SAVING ITEM—41



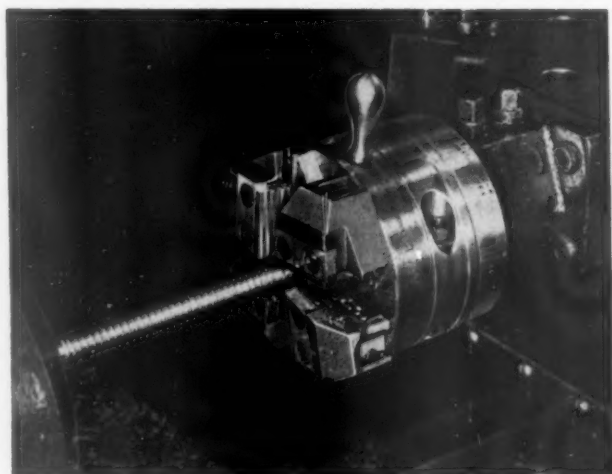
Grinding 1,600 Rough Castings Daily

One of America's leading automobile manufacturers has achieved big man-hour savings in the processing of rough cylinder head castings. The processing removes the rough metal fins protruding from the sides of the cast iron head as they come from the moulds. A production rate of 1,600 castings a day had to be maintained. Previously, hand chippers were employed to remove the fins. It was a tedious job and extra men had to be put on to meet the daily quota. Now only one man using a grinder for snagging does the job and keeps up with production line demands, effecting considerable savings in labor and getting better results as well.

COST SAVING ITEM—42



Machine Tools



Special Head on Turret Lathe Cuts Cost 75%

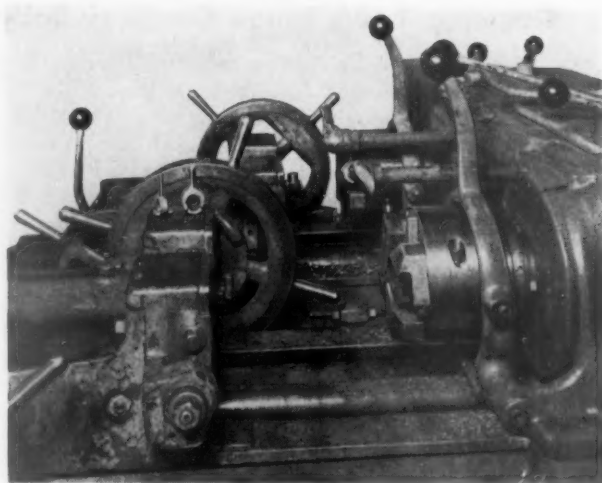
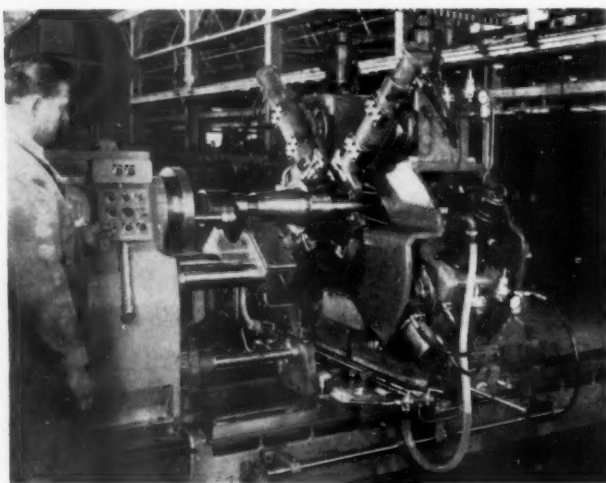
Scott Aviation Corporation, an aircraft equipment manufacturer, has realized large savings on threading operations by using a turret lathe equipped with a certain type of 1¼" head and a lead screw attachment. The required thread is cut in one pass in .192 minutes using a spindle speed of 230 rpm. Former threading methods required two passes to produce the finished thread to the required tolerances—one roughing and one finishing cut. Even then, hand fitting with the mating nut was necessary during assembly.

COST SAVING ITEM—43

Special Finishing Machine Has Three Times Longer Life

A special machine developed for finishing of mill rolls in a rolling mill that produces stainless steel strip stock averages about three times the life of ground rolls. The finishing of these mill rolls had been previously done by grinding. A highly reflective surface was received, giving the proper surface roughness reading and yet the life of the roll before it required refinishing was too short. The area contact of the new finishing stone develops almost no measurable heat which eliminates the flow of metal and the soft outer surface formerly found. In actual production it has been found that the new rolls have run 36 production hours as against less than eight hours for a similar set of ground rolls.

COST SAVING ITEM—44



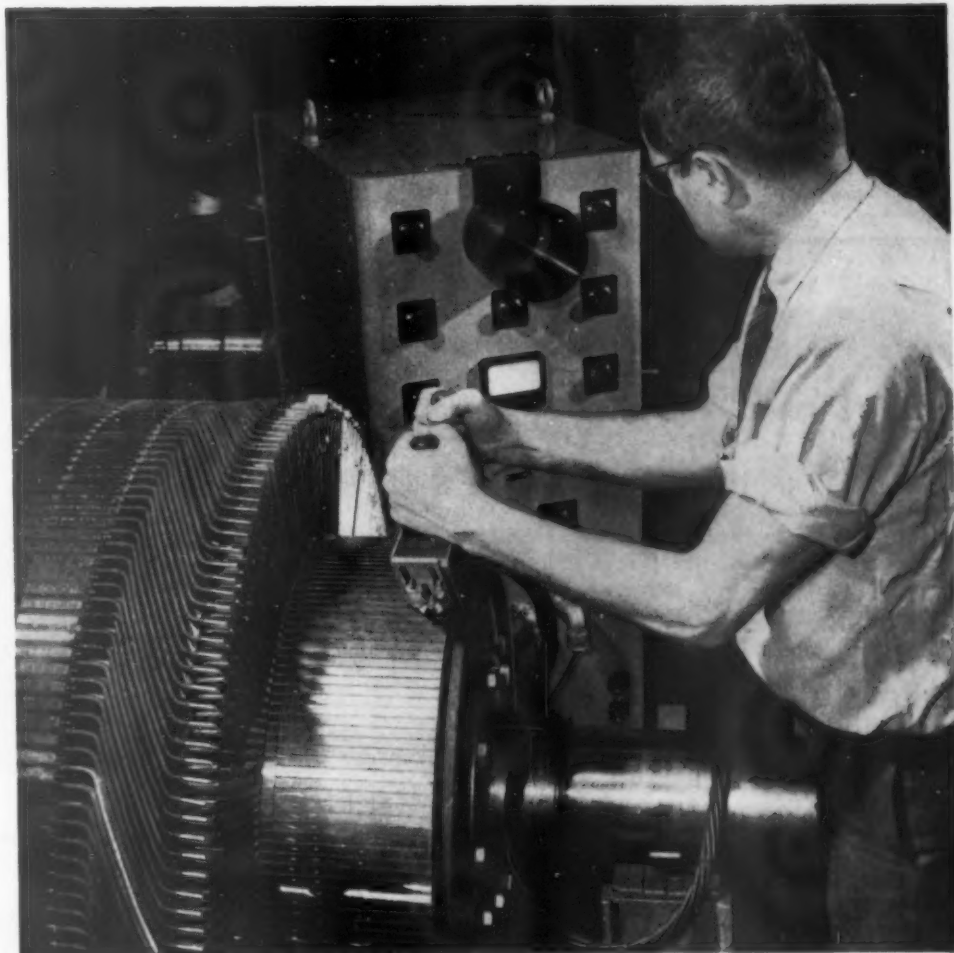
Threading Costs Lowered

Eye bolts, for use in the assembly of switch-gears, are now threaded on a 1" double leadscrew threading machine in the plant of a large Eastern manufacturer. Records show that costs by previous methods averaged 120% higher. Lower tool cost has been an important factor in the overall cost reduction from threading these parts with the new machine. Approximately 25,000 pieces are produced between each regrinding of the chasers. This combined with the fact that the chasers are reground and used for most of their original length has brought tool cost to a minimum.

COST SAVING ITEM—45

Profitable Purchases:

Electrical Equipment



MANUFACTURERS of electrical equipment have a fine record of progress in the development of time and labor-saving devices for greater production and better products—both in time of war and peace. In the increasingly competitive market now developing, the steady stream of new and better equipment coming from electrical manufacturers to industrial buyers is going to play a dominant role. It will speed production, cut costs, and generally contribute to improving a firm's sales position. And yet, according to experts, the full potential of electrical operation has been only half reached. How some companies are already using that potential to profitable advantage is shown in this section.

Electrical Equipment



Cuts Steel Needs for Bomb Nose

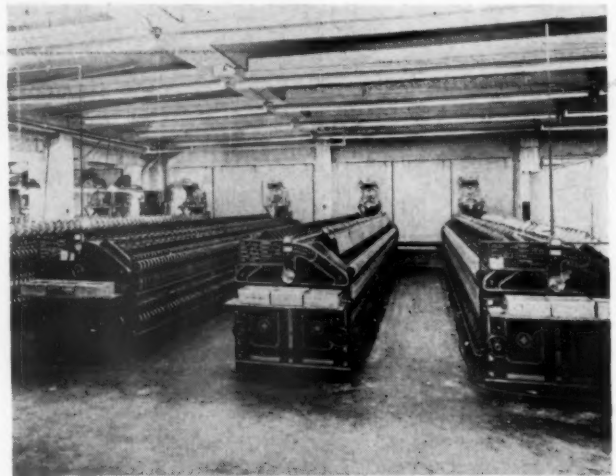
Edgewood Arsenal authorities abandoned conventional machining methods in an attempt to get immediate high production on a certain type of bomb nose. Induction heating was used to bring 2 lb. steel blanks up to forging temperatures for use in a hot extrusion process. Former methods required 3½ lb. blanks to produce the same bomb noses. A close schedule was met; savings in steel were substantial.

COST SAVING ITEM—46

Electric Power Drives Increase Output 30%

Variable speed motors installed on spinning frames by the Jantzen Knitting Mills, Inc., Portland, Ore., have stepped up production by 25% to 30%. They enable machines to be started at a low speed and then speeded up to an output that cannot be reached with a constant speed motor.

COST SAVING ITEM—47



Cost of Hardening Cut From 13¢ to 6¾¢

A 48% reduction in the cost of hardening basket shafts for use in washing machines has been effected at the Syracuse, N. Y., plant of the Easy Washing Machine Co., through the use of two electronic induction heaters. The entire cost of the hardening process, including labor, power costs, repairs, depreciation, and overhead has been reduced from 13¢ to 6¾¢ per basket shaft. Previously, shafts were hardened with a cyanide process. Now, one man on one shift does the work of two men on three shifts, allowing transfer of five men to more productive jobs.

COST SAVING ITEM—48



Electrical Equipment



Capacitor Cost Written Off In 6 Months

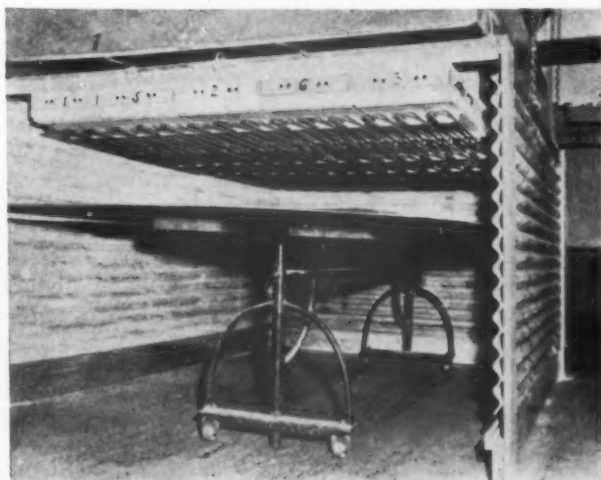
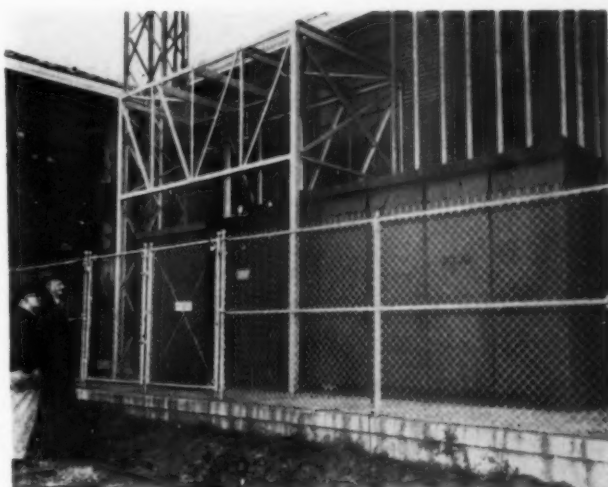
A Cleveland department store was able to write off total capacitor installation costs in six months. The Halle Brothers Company said: "In the first year, we saved \$200 over the cost of the installation. We expect to save \$800 each succeeding year." Since the capacitor installation, the power factor of the store has increased 20% and the total power billing has been reduced 18% to 20%.

COST SAVING ITEM—49

Save 25% on Motor Maintenance And 20% On Bulb Replacement

Savings of approximately 25% on motor maintenance and 20% on light bulb replacement have been effected at the Highand Cotton Mill, High Point, N. C., since the installation of five load center substations. These larger power units replaced three 750 kva transformers which had become increasingly overloaded because of increases in the mill electrical load. Attempts to maintain motor voltage by using higher voltage taps on the transformers caused high voltage during light periods and resulted in excessive lamp burnouts.

COST SAVING ITEM—50



Heating Time Cut 55%

Adapting electric radiant panels to make a simple oven has cut by 55% the time required to pre-heat 5' x 8' plexiglas sheets for forming and vacuum molding by the Plastic Turning Co., Leominster, Mass. The former convection method required 18 minutes, but the transparent plastic sheets, laid on an adjustable table, readily absorb the intense far-infrared wave length in 8 minutes. With a capacity of 108 kw, two input controllers vary the radiant output to suit the gage of the work in progress.

COST SAVING ITEM—51

Electrical Equipment



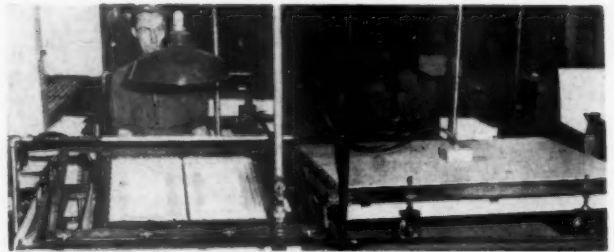
Big Savings From Diesel Locomotive

An Indiana short line railroad, the Louisville, New Albany and Corydon Railroad, has reduced operating costs by replacing its 31-year old steam locomotive with a 45-ton diesel electric. It expects an annual return of 14.6% of the capital investment of the new locomotive. Most of this is the result of a saving of \$5,600 a year in operating and maintenance expenses compared to similar yearly expenses of the old steam locomotive.

COST SAVING ITEM—52

Thermoplastic Sheetting Preheated 60% Faster

Fabri-Form Co., Byesville, Ohio speeded up the pre-heating of thermoplastic sheeting for vacuum forming by 60% over previous methods by changing to far-infrared electric heating panels. The best previous heating times were never under 30 seconds while in the new installation two standard panels do the job in 12 seconds. The panels are rated at 10.8 kw each. They produce intense infrared energy that is readily absorbed by transparent or light colored materials.



COST SAVING ITEM—53



Reduce Operating Expenses 75%

New York, New Haven, and Hartford Railroad officials expect to reduce operating expenses 75% with a new diesel-electric rail car. The rail car is expected to solve the problems of handling branchline service economically. The rail car is making its debut on a 17-mile stretch between Mansfield, Taunton, and Fall River, Mass. It offers passenger service where none has been provided for twenty years. It is built to carry 50 passengers.

COST SAVING ITEM—54

Electrical Equipment



Fuse Blows Cut From 4 to 5 Daily To 3 In 7 Months

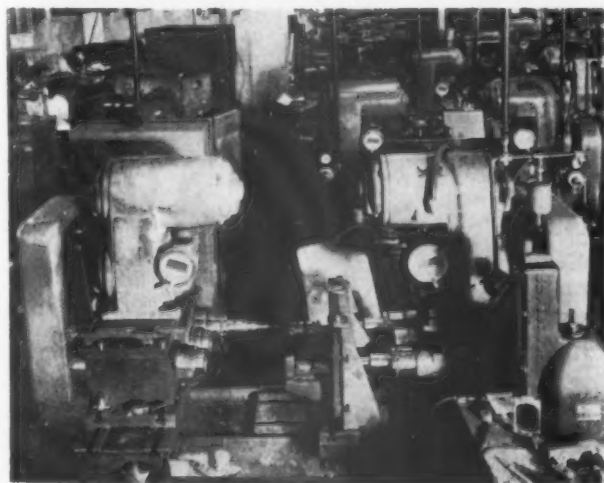
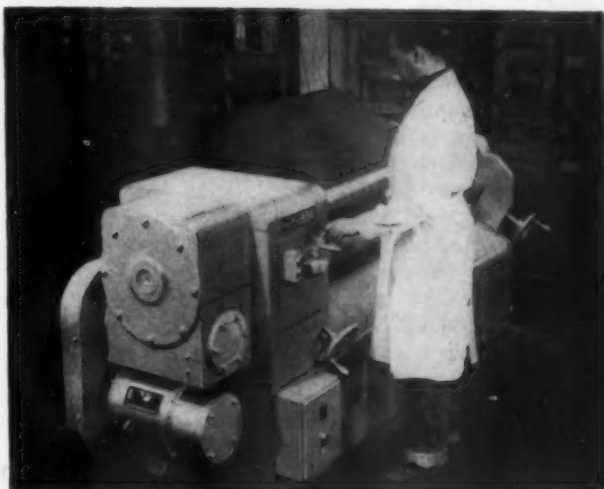
The use of new dual-element fuses in overhead cranes operated by the Nicholson Terminal & Dock, Ecorse, Detroit, Mich., reduced fuse blows from four or five a day to only three in seven months. Because of this, down time and lost working time was reduced considerably. The installation of the new fuses was made after a test on one crane for an eight-hour shift, when a comparison of down time was made with that of the fuses normally used. To be sure the fuse blows weren't due to the operator, a change in the test was made and the new fuses used on two shifts and the old fuses on one shift. The results were the same, justifying the switch to the new fuses.

COST SAVING ITEM—55

Motors Save Production Time

More accurate control and faster production can be achieved through use of a brake motor instead of standard motors. Niagara Machine and Tool Works, Buffalo, N. Y., has found advantageous brakemotors for several reasons as well. Work can be reversed rapidly and frequently without kicking out thermal overloads as might occur in reversing by plugging a standard motor. Accurate jogging in short increments is another advantage because the operator has complete and accurate control at all times.

COST SAVING ITEM—56



Grinding Operation Eliminated By Use of Speed Controls

Speed controls employed on boring machines in the plant of Lear, Inc., Grand Rapids, Mich., permit the peripheral speed of items being bored to match the best cutting speeds of Carboloy or diamond tipped boring tools. Addition of the speed control units has eliminated a grinding operation and resulted in finer, more accurate finishing and lower manufacturing costs.

COST SAVING ITEM—57

Materials and Components



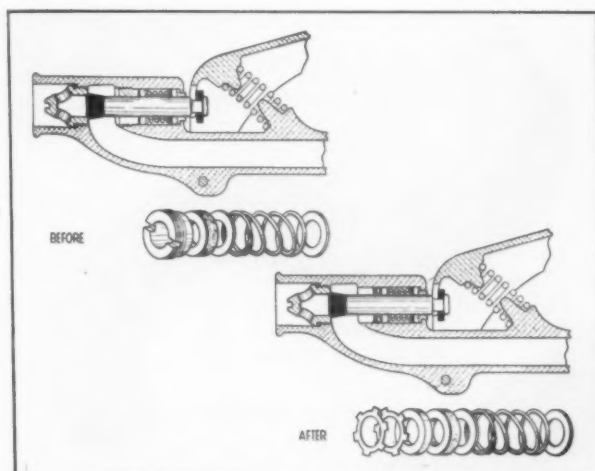
PROBABLY no other area of manufacturing has shown such rapid, and in some cases almost bewildering progress, in the development of new money-saving ideas than that of materials and components. Substitutions—or as the successful suppliers like to refer to them, replacements—in materials and methods of fabrication, have proved highly successful in cutting costs and improving products. And in innumerable instances what started out as a temporary change forced by shortages, has stayed as a permanent arrangement in the manufacture of a product. An interesting, and profitable, collection of successful use of new materials and processes follows.

Materials-Components

Cuts Processing Costs 66 $\frac{2}{3}$ %

A laminated plastic bobbin which can be used for all twisted yarns not only holds residual shrinkage differentials constant within one-half of 1%, but has slashed some processing costs by as much as 66 $\frac{2}{3}$ %. Designed primarily to eliminate several process steps in the relaxing and pre-shrinking of nylon yarns, the bobbin has cut pre-shrinking costs as much as 80%. One major southern textile mill currently using about 10,000 units reports cutting the cost of processing nylon yarn by 28¢ a pound.

COST SAVING ITEM—58



Retaining Rings Save 6¢ per Unit

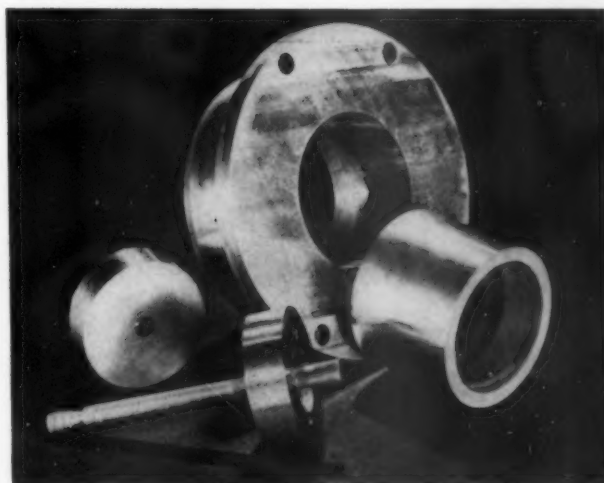
Ansul Chemical Company's new dry chemical fire extinguisher features a water-tight precision nozzle. Felt seals used in the plunger created an assembly problem because variations in the dimensions and densities of seals required individual precision assembly with a stainless steel plug in order to get the desired drag. Now by using two self-locking retaining rings and a washer, the rings are quickly and easily assembled by simply pushing against the washer that abuts on the seal. The rings need no grooves and the drag is controlled easily by varying the position of the rings. The new method has upped assembly from 25 to 60 units per hour and cut costs 6¢ per unit.

COST SAVING ITEM—59

Tungsten Carbide-Equipped Molds Last 10 Times Longer

At Carborundum Co., Niagara Falls, N. Y., where tungsten carbide-equipped molds are used in producing silicone carbide and aluminum oxide grinding wheels $\frac{1}{8}$ " to $4\frac{1}{2}$ " diam, the wear-resistant inserts are providing an overall working life about 10 times that of other engineering materials. One 4" mold on an automatic press, for instance, produced as many as 86,000 pieces and was still in good condition. The mold employed previously lost its efficiency at the end of 2,500 pieces.

COST SAVING ITEM—60





Big Saving In Switch To Investment Casting

In the pilot construction stages, an eastern firm fabricated this torque tube in two parts—the flange and the tube. Then they were brazed together. By switching to an investment casting, the company made substantial saving in turning, profiling, milling, drilling and boring, and entirely eliminated the brazing operation. All this has been accomplished without sacrifice of quality.

COST SAVING ITEM—61

Material Replaces Cost-Prohibitive Rubber-Coated Cloth

In order to secure an advantage over a close competitor, an important producer of flexible air duct turned to a wax-treated, double-creped material made from Kraft. This special paper replaced a cost-prohibitive rubber-coated cloth, and performed to specifications. It is crimped to the metal spiral to form a completely effective duct.

COST SAVING ITEM—62



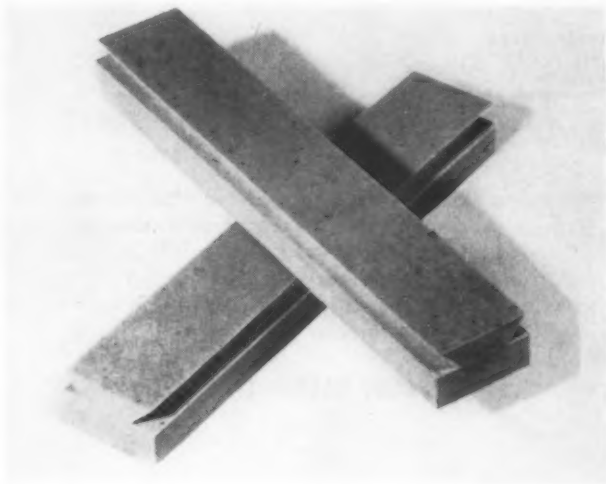
Sheave Production Costs Cut 80% By Use of Plastics

The Allan Electric and Equipment Co., Kalamazoo, Mich., faced two problems with metal drive sheaves operating from $\frac{3}{4}$ hp motors at 2,000 rpm. Machining costs were excessive to maintain required concentricity, and density variations caused excessive vibrations. Substitution of a plastic sheath molded of rubber-phenolic compound cut sheave production costs 80%. Because of lighter weight, density variations caused no vibration. The sheave showed no wear from the belt after 3,000 cycles of being run at top speed, then brought to a sudden stop.

COST SAVING ITEM—63



Materials-Components



Blocks Give 60 Times More Service

Dixie Mills, La Grange, Ga., replaced the wooden vibrator blocks for its Draper looms with blocks made of plastic laminate. The wooden blocks normally wore out in about three months, necessitating frequent downtime for replacement. The plastic laminate blocks, however, have shown practically no signs of wear after 18 months and are expected to last 120 to 180 months. The slightly higher cost is more than offset by the sharp reduction in inspection and maintenance time.

COST SAVING ITEM—64

Silicones Save Copper; Reduce Size and Weight of Welder

The General Electric welding department, Fitchburg, Mass., was able to make this 300 amp. arc welder 19% lighter and 10% more compact by using silicone resins instead of conventional resins in Class H insulation of the coils. The silicones also made possible a 25% reduction in use of critical copper. They permit the welder to operate at higher temperatures and provide exceptional resistance to moisture and chemical fumes.

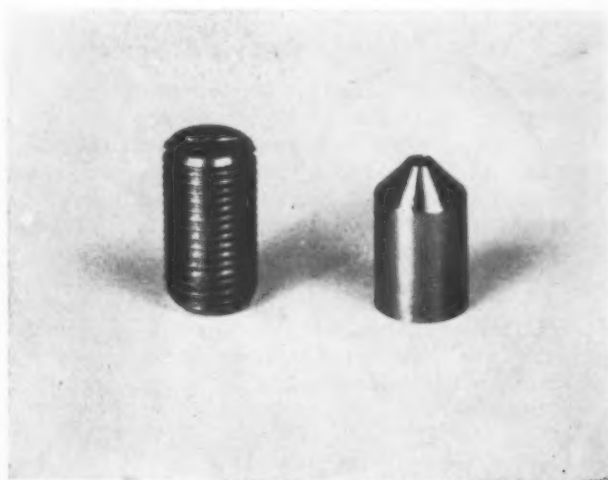
COST SAVING ITEM—65



Production Increased Up To 36%

Production of plungers and adjustment plugs by a Chicago jobbing screw machine shop was increased 36.3% and 25% respectively, when a switch was made from Bessemer screw steel to an open hearth lead bearing screw steel. Time per piece was reduced from 25 sec to 18½ seconds and from 17½ sec to 14 seconds, respectively. More than double the tool life was secured; there were fewer rejections; the parts had a better finish; and the quality of product was improved.

COST SAVING ITEM—66





Hard-Faced Stripper Bits Save \$8,000 A Year

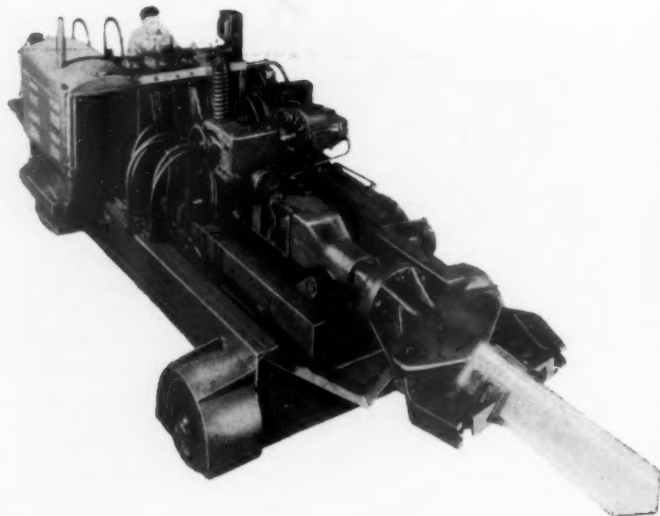
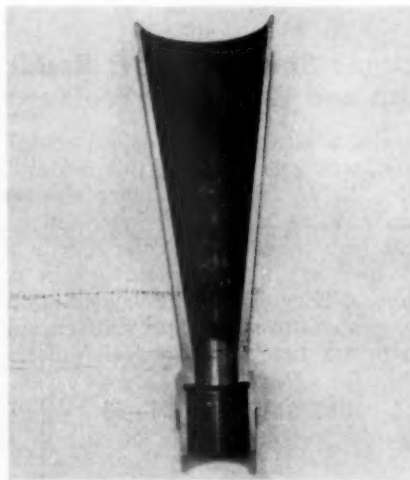
A set of open hearth stripper bits for removing big-end ingots from their molds usually costs about \$100. By reclaiming worn bits by means of grinding them smooth and rebuilding a knife edge with an alloy, some steel companies have saved as much as \$8,000 in one year.

COST SAVING ITEM—67

Welded Steel Tubing Cuts Costs 92%

Flash-hiders for 20 mm. machine guns were formerly turned out of 3" solid bar stock. The costs were very high, production rates were low and scrap generation was extraordinary. Using 2½" diam. welded steel tubing Will-o-Hill Industries, Inc., Willoughby, Ohio, now makes the flash-hiders for the Army Ordnance at a cost saving of 92%. They are turned out faster on low-hourly-cost punch presses instead of on costly lathes and there is no scrap loss.

COST SAVING ITEM—68

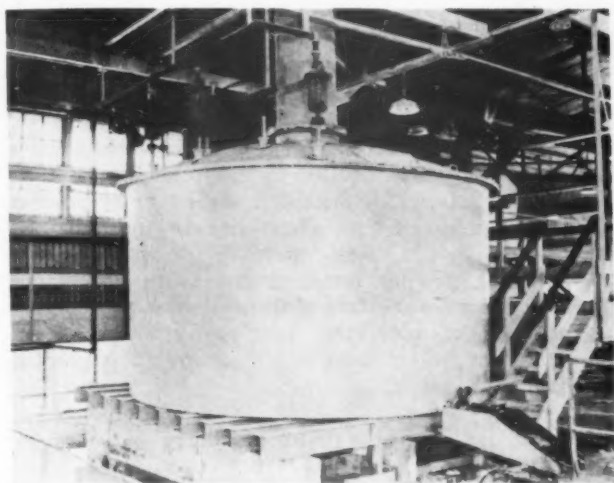


Tube Fittings Provide Savings

Edgar E. Brosius Co., Pittsburgh, Pa., manufacturer of autofloor manipulators now uses steel tubing connected with steel triple-lock tube fittings for the hydraulic lines on these machines. Earlier models used ordinary threaded pipe which meant need for much longer lengths of flexible hose, making the machine look extremely untidy as well as causing numerous projections, which if caught on obstructions in the path of the machine result in obvious difficulties. The tubing provides substantial savings and at the same time gains many obvious advantages in the design and future maintenance.

COST SAVING ITEM—69

Materials-Components



Tank Cost Reduced \$7,500

The American Cyanamid Company's Alabama plant has reduced the cost of tanks used in the manufacture of alum from \$14,000 to \$6,500 and their weight from 13,200 lb. to 2,200 lb. This was done by the use of a corrosion-resistant polyester, non-chipping resin, reinforced with Fiberglas mat, in the construction of the tanks instead of lead and brick-lined steel. The tanks evaporate to dryness a very corrosive aluminum sulfate liquor. The plastic made it possible to build the tank with a side-wall thickness of only $\frac{3}{8}$ " and a bottom thickness of only $\frac{1}{2}$ ".

COST SAVING ITEM—70

22% Less Breakage With New Material

Electroflow Pumps, Inc., Los Angeles, Calif., had to find material for the exhaust housings of aircraft cooling systems that would withstand the pressures built up by the motor blowers. The material had also to be capable of withstanding exposure to extreme temperatures ranging from 125C to -55C. Electroflow selected glass-reinforced alkyd. Its use has saved 22% of breakage experienced on parts made from other materials.

COST SAVING ITEM—71

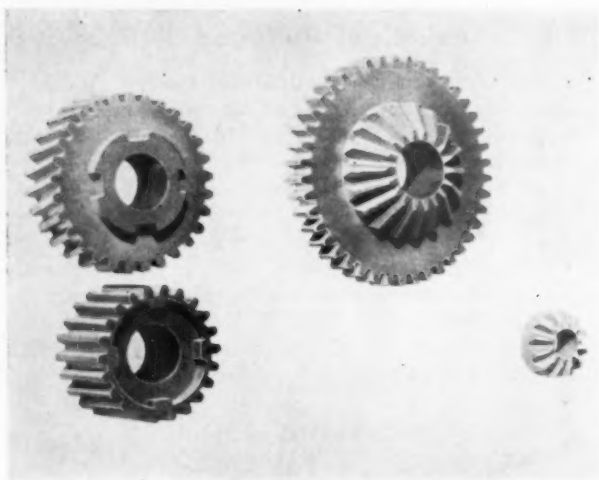


Rubber Hose Gives 6 Times Better Service

The manufacturer of a plastering machine had been having trouble with finding a satisfactory hose through which the plaster could be piped to the spraying nozzle. The hoses tried were too easily dented, slowing down the flow of plaster, or became too heavy and stiff for a man to handle. After 40 different hoses had been tried, an ideally constructed rubber hose was found. The hose attached to the machine gives twice as much service as the best of the others tried and the hose for the spraying end gives six times better service than any other hose.

COST SAVING ITEM—72

Materials-Components



Costs Cut To A Fraction By Powder Metal Processing

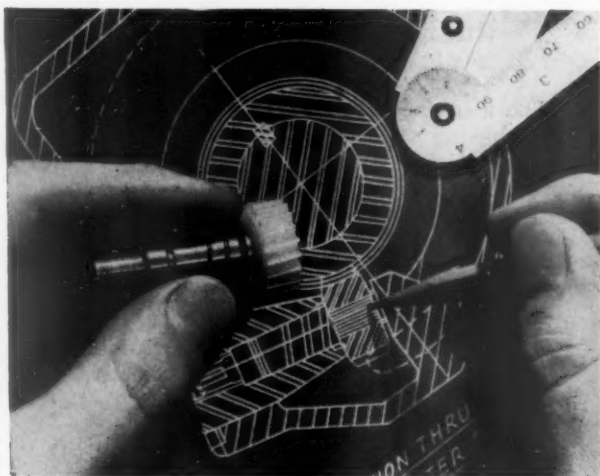
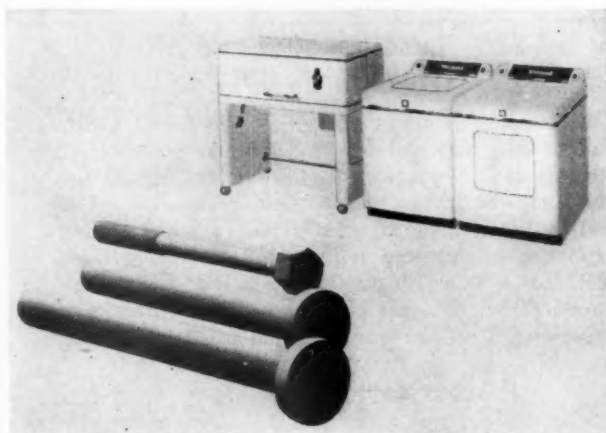
The use of a special press to make these powder metal parts has resulted in the following savings: The cost of making the small bevel gear by powder metal processing is about one-seventh that of machining. The dual operation of pressing and sintering powder metal on the mitre gear saves as much as four-fifths of the cost of the old method. Powder metallurgy production of the helical and spur gear reduces cost to about one-eighth of machining costs.

COST SAVING ITEM—73

Yearly Saving Of \$11,190

The three special parts shown are produced for the Whirlpool Corp., for use in its home laundry equipment. Through a slight change in design, the producer effected a saving of from \$7.00 to \$20.00 a thousand on these parts or total annual savings amounting to \$11,190. Two of the parts are used to support and align the entire mechanism in the Whirlpool automatic washer, the other is used as a pressure spring adjustment on the shoe of the company's ironer.

COST SAVING ITEM—74

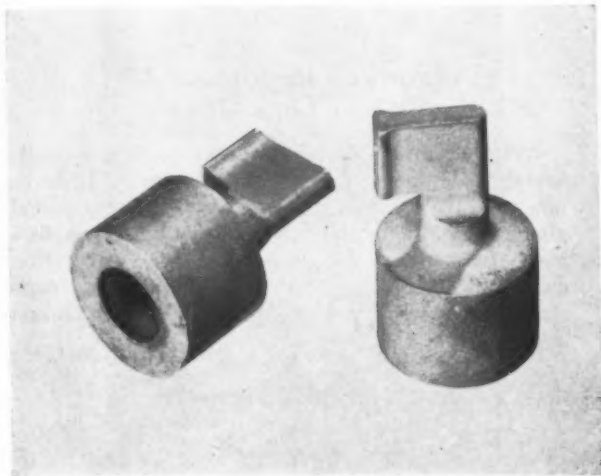


Nylon Gear Outwears Previous One, Costs 50% Less

An automotive speedometer take-off gear is molded of nylon directly on the gear shaft in one operation, compared to the five production steps required for the part formerly used. It not only outwears the previous part, but costs 50% less.

COST SAVING ITEM—75

Materials-Components



Precision Casting Saves 33% on Production Costs

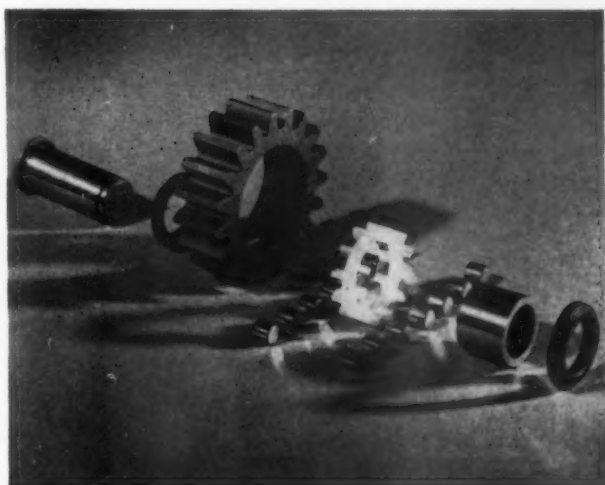
The control finger for an air hoist was formerly machined in two pieces and brazed together. The parts broke at the brazed joint in from two to six weeks under the repeated strain of starting and reversing the hoist. The maker, a tool company, found that control fingers made by precision casting were stronger than the machine parts and could be made at one-third the former cost.

COST SAVING ITEM—76

Part Keeps Transmission Working Over 40 Times Longer

A helicopter manufacturer found it impossible to get over 25 hours of reliable service life from any standard anti-friction bearing small enough for a particular use in the machine's transmission. After a long search for a satisfactory part, cages molded of nylon were adopted. Since then, no bearing failures have been reported, even in helicopters with over 1,000 flight hours.

COST SAVING ITEM—77

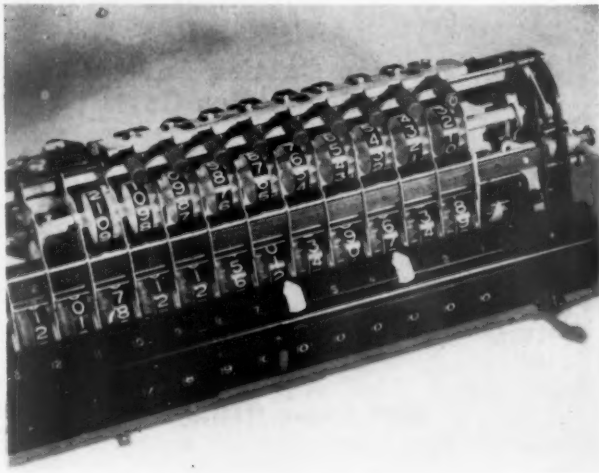


Alloy Trays Save \$1,600 Yearly

Trays used by a large iron and machine works, Oklahoma City, Okla., to carry tool joints while they are being treated chemically had to be rebuilt every four weeks and scrapped within two months, because of corrosion. Now trays made of a particular alloy give two years' service—twelve times the life of the other trays. Savings in replacement and maintenance and other indirect costs total \$1,600 yearly.

COST SAVING ITEM—78

Materials-Components



Product Improved At 67% Less Cost

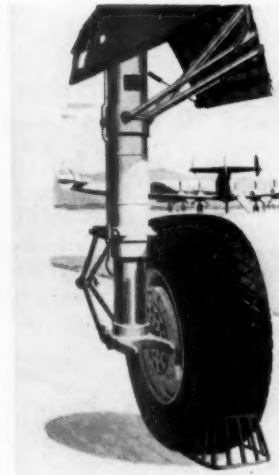
Nylon counting dials and cams used in a well-known calculating machine have shown little or no measurable wear, need no lubrication, and give quieter, smoother operation than parts formerly used—all at 67% less cost. A one-part nylon cam is molded in one step—the former part consisted of three pieces and required 20 production operations.

COST SAVING ITEM—79

A Saving of \$10.00 Per Part

Aircraft manufacturers found that in the process of hogging landing gear plungers out of bar stock half the aluminum was wasted in chips, valuable machine capacity was tied up, and costly man-hours squandered. A method of impact extrusion of this part eliminated these problems. Now, a slug of tough aluminum alloy is placed in a shallow die, a punch strikes it, and the aluminum squirts up faster than the eye can follow. Almost instantaneously a plunger is ready for finish machining and assembly—at a saving of \$10.00 per part.

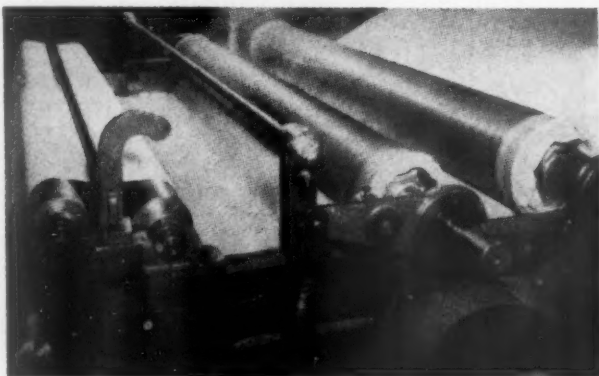
COST SAVING ITEM—80



Entire Cost of Slasher Roll Jackets Saved in 2 Years

Before they installed stainless steel jackets on the sizing and finishing rolls of three slashers, Monroe Cotton Mills, Monroe, Ga., spent \$110.40 every year for cleaning the cast iron rolls previously used. Now they save this maintenance expense and also eliminate a twice yearly, 8-hour shut down for cleaning. Because the stainless jackets eliminate rust, more than 1,000 additional yards of fabric are produced per yard of slasher cloth—a saving of \$53.07 in slasher cloth. These maintenance savings alone paid the entire cost of the stainless steel roll jackets in less than two years.

COST SAVING ITEM—81



Materials-Components



Silicone Rubber Bushings Reduce Capacitor Scrap

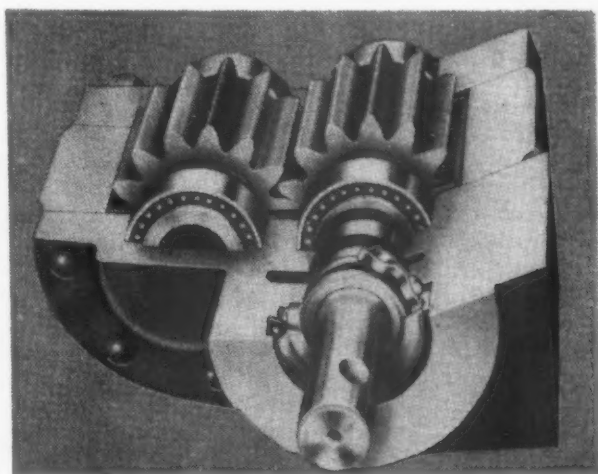
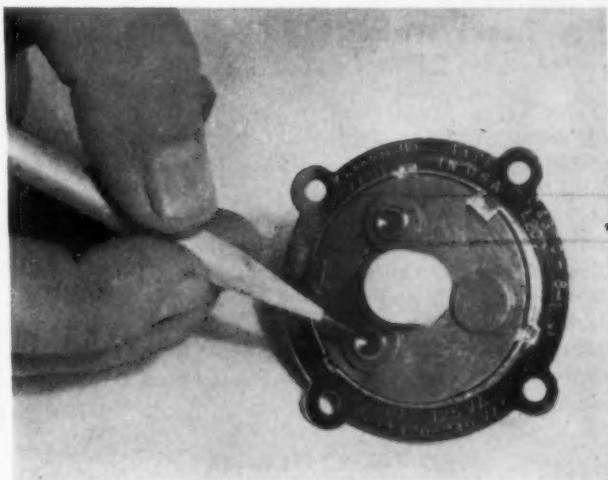
An "unacceptable high percentage" of its new metal-clad tubular capacitors was going to scrap at General Electric Company's Hudson Falls, N.Y., plant. By using silicone rubber bushings (left) as hermetic end-seals on the capacitors, in place of the brittle glass (right) has eliminated one cause of scrap. The glass seals frequently cracked from handling, or from excessive heat during soldering operations.

COST SAVING ITEM—82

Rejects Eliminated—Assembly Time Halved

The Spencer Thermostat Division, Metals and Controls Corp., Attleboro, Mass., cut costs when it selected a special type insulation for its Klixon thermostat-snap control base. Previously, rejects ran high when porcelain bases frequently cracked as metal contact points were peened during assembly. The new insulation enables inserts to be molded in the base instead of peened. The dimensional stability of the material halved the time required for precision assembly of the thermostat, for inserts are always in the same place. It gives the switch base high dielectric strength and temperature resistance up to 700 F.

COST SAVING ITEM—83

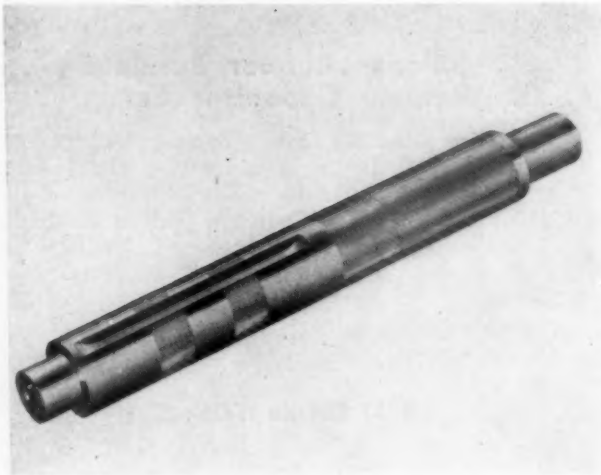


\$40 A Ton Saved in Steel for Gears

Commercial Shearing & Stamping Company reports that a straight chrome steel used in lieu of another alloy steel, containing certain elements in critical supply, is an improvement for making gears of heavy-duty rotary pumps. The gears made with this chrome steel not only meets the company's high performance standards but the steel is easier to machine and heat-treat. In addition, a lower grade extra is paid on it—saving \$40 on every ton bought.

COST SAVING ITEM—84

Materials-Components



Machining Time Cut In Half Through Use Of New Type Steel Bars

Machining time on generator shafts was cut in half by a midwest manufacturer by switching to severely cold-worked, furnace-treated steel bars. The 2½" shaft, 19¼" long must be drilled through its entire length, have both ends stepped down, and keyseated for 10¾". Drilling was a headache and the keyseating often resulted in severe warpage. It required two hours to finish one shaft. Machining time on the new bars is one hour, warpage was eliminated and the shaft itself is stronger.

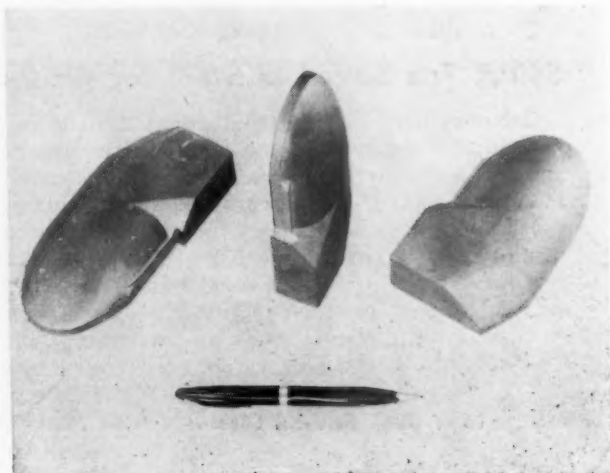
COST SAVING ITEM—85

Tanks Weigh 16% Less, Use 27% Less Steel

The Troop Water Heater Co., Pittsburgh, Pa., by using different steel water heaters and softeners has been able to reduce shell thickness in some of these units as much as 31%, an average of 27% on all units. This weight saving in the shell reduces the total weight of the units about 16%, makes them more readily handled and easier to install. Shipping costs are 15% lower—a sizable saving when distant markets are being served. In addition, because the steel is stiffer it forms more smoothly in the bending rolls and fluting difficulties disappear.



COST SAVING ITEM—86

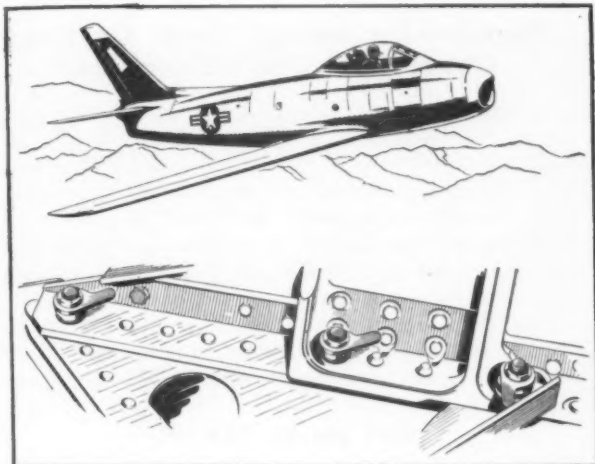


Counterbalance Weight Reduces Cost of Radar Production

The problem of great weight in a small space was solved for a radar apparatus manufacturer by the design of a counterbalance weight made of a high density metal. The counterbalance replaced one of lead, giving approximately one-third more weight per unit of space at 16.9 grams per c.c. compared to lead at 11.34 grams per c.c. The cost of production was actually diminished by reducing the size of the counterbalance mechanism with an increase in weight.

COST SAVING ITEM—87

Materials-Components



Specially-Designed Nut Type Lug Cuts Retorquing Time Over 98%

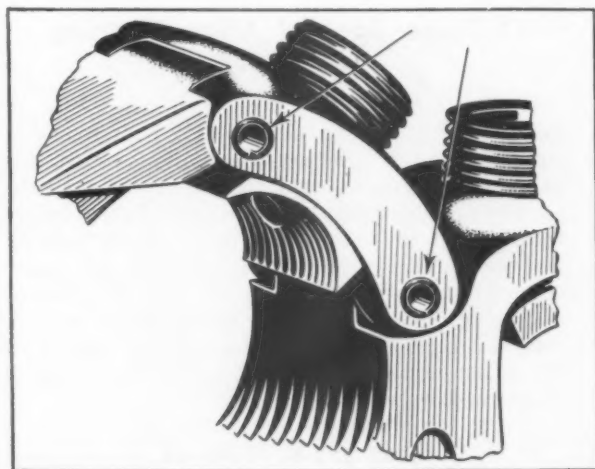
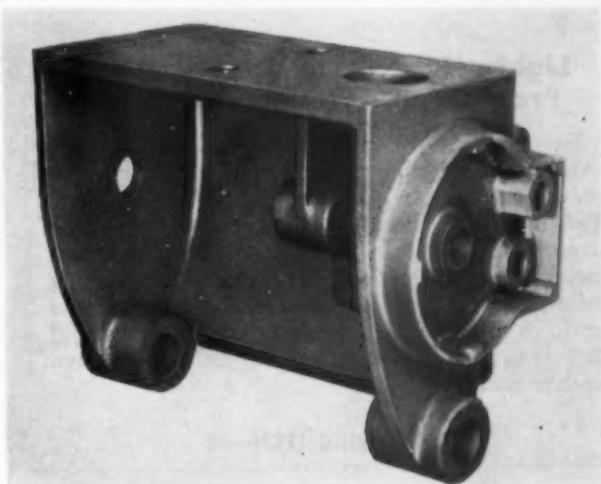
Retorquing time on U. S. Air Force Saberjet machine gun mountings under combat conditions was reduced from 14 man hours to 15 minutes through the use of a specially-designed nut type lug. The machine guns are mounted in a "closed out" position. Because these nuts had to be installed from inside the fuselage and were located deep within the fittings, the assembly job presented obvious difficulties. The new lug, is capable of withstanding 430 inch pounds and is made as an integral part of the nut. It acts as a wrench against the side of the structure. The lug is located above the center of the nut to overcome "climbing" up the forging's fillet. Considerable time also is saved in assembly.

COST SAVING ITEM—88

45% Saved On Cost Of Gear Part

The manufacturer of a large power-driven metal saw found that the cost of a fabricated gearbox was out of line from a competitive standpoint. The gearbox was redesigned to permit use of a certain make of iron castings. Result—the iron casting is effecting a saving of 45% on original cost of the part plus a saving of 41% on machine and labor expense.

COST SAVING ITEM—89

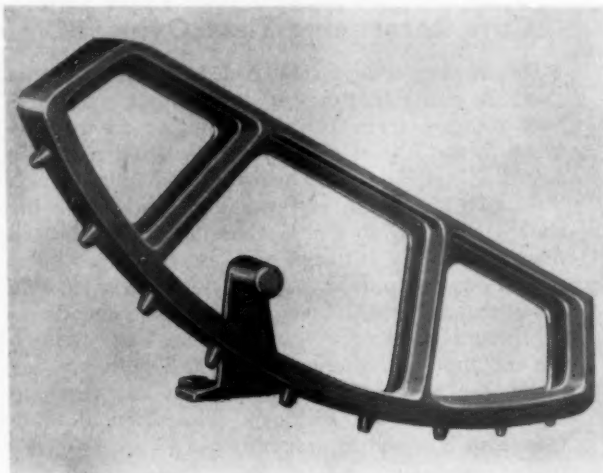


Assembly Time Reduced 50% On Hinged Clamp Connectors

Assembly time was cut approximately 50% by an electrical manufacturing company through the use of hollow, split cylindrically formed pins with chamfered ends on their Type "XTP" connectors. Two riveting machines were required to peen these hinge pins, consuming excessive time and money. Now the pins are compressed as they are driven, locking firmly in position by constant tension, and eliminating any reaming or peening.

COST SAVING ITEM—90

Materials-Components



Foundry-Engineered Steel Castings Cut Hopper Costs \$5.48 Each

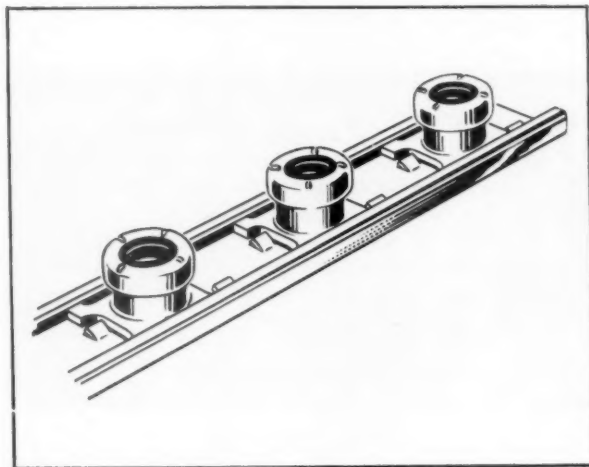
Conversion to foundry-engineered steel castings from weldments built up from 13 pieces of steel plate effected a cost reduction of \$5.48 per unit for the manufacturer of an end dump hopper. The foundry-engineered steel castings were used for rockers and stop brackets. Overall weight was cut 8.55%, from 117 lbs. to 107 lbs., and production was simplified by making parts interchangeable. Also, they eliminated all machining, stepping up production of hoppers, lengthened life of individual parts and improved their appearance.

COST SAVING ITEM—91

Lightweight Gang Channel Nuts Provide 30% Weight Reduction

New lightweight gang channel nuts used by aircraft manufacturer offer strength equal to the previous design, while reducing weight by 30%. The new nut is supplied assembled in a high strength aluminum-alloy channel, blue anodized for ready identification. The integral red locking collar assures a vibration-proof grip that makes uniform bolt loading easy. A weight-saving of 25% was accomplished in a similarly redesigned anchor nut.

COST SAVING ITEM—92



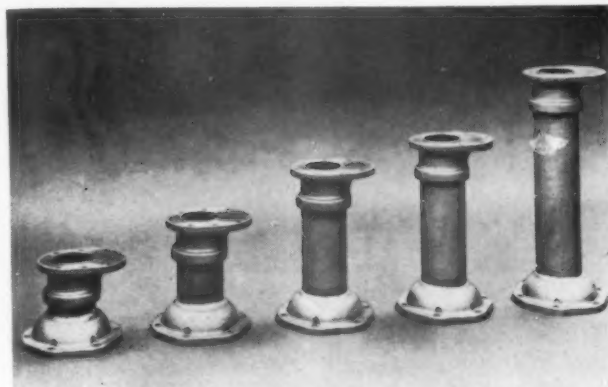
1-Piece Special Alloy Casting Saves 60%

Builders-Providence Inc., Providence, R. I. manufactures a meter used widely in industry in connection with the measurement of steam, gas and air flow in pipe lines. These meters are subjected to a wide range of temperatures from below freezing up to 450 F, and to corrosive liquids, and pressures as high as 300 psi. The old design was of bronze in two pieces. The use of a special alloy permitted redesigning in one piece with a cost saving of 60%. A special coating applied to the alloy insures resistance to corrosive attack under varying temperatures.

COST SAVING ITEM—93



Materials-Components



Cast-Weld Assemblies Reduce Costs 38.4%

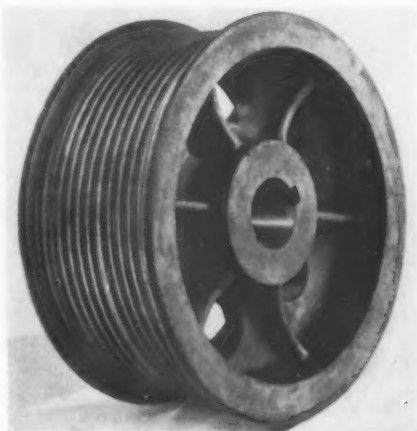
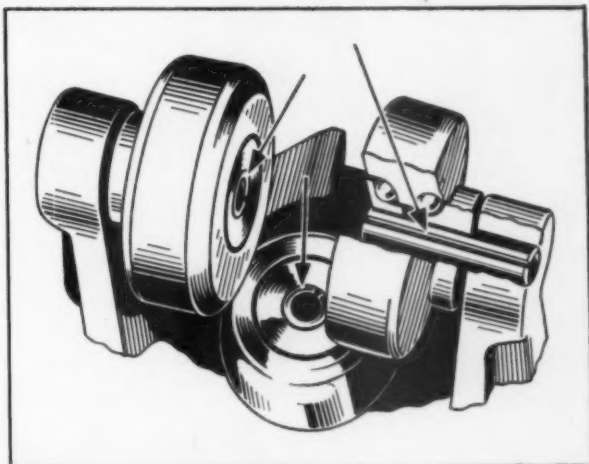
A switch from one-piece steel castings to cast-weld drive spacer unit assemblies made it possible for Superior Steel & Malleable Castings Company, Benton Harbor, Mich., to cut the total cost of a customer's tractor parts 38.4% and reduce the amount of steel required by 30%. In addition, average weight was reduced to 37.1 pounds from the original 52.5 pounds for the drive spacer units made in five different size requirements. Similarly, economy and efficiency were made possible through use of a single set of inexpensive pattern equipment, single core box and flask equipment and simplified cleaning and handling.

COST SAVING ITEM—94

Slotted, Hollow Cylindrical Pins Cut Manufacturing Costs 30%

A machine company reports a saving of 30% in manufacturing costs, and a considerable saving in maintenance and repair since it began using slotted, hollow cylindrical design pins to fasten wheels to a casting in individual roller units of "Wil-Mac" conveyors. Formerly a crack loss ratio of 35% was a serious problem to the company. Assembly had called for an expensive, time-consuming reaming operation, which is no longer necessary because the new pin compresses as it is driven, exerting a constant pressure against hole walls, making it self-locking and vibration-proof.

COST SAVING ITEM—95



Cost Saving of 41% In Drum Production

A cable drum was formerly produced by using plates of various thickness—cutting, assembling, welding and finally machining. Valuable and costly man hours were expended in coordinating the efforts of several mechanics involved in these operations. By redesigning the part as an iron casting of a specified type a cost saving of 41% per unit was effected. On a typical order, involving 20 castings, the net saving to the customer was \$197, after initial pattern cost had been written off.

COST SAVING ITEM—96

Product Finishing



EVERY product manufacturer is faced with the problem of proper finishing, no matter what the basic material used in manufacture. In many cases it is the superior finish that earns his product the necessary competitive advantage—whether the finish gives better merchandising appeal, better service, or a combination. New materials, new equipment, and new methods of product finishing are being regularly developed. Each presents quite definite saving possibilities—in time, material consumed, or more saleable product. How these various savings are being accomplished in actual applications is described in case histories on the following pages.

Product Finishing



Low Pressure Spraying Saves Appliance Maker \$50,000 Yearly

A major appliance manufacturer changed to low pressure spray guns for finishing his products. The spraying makes a much "wetter" coat possible, gives greater film thickness and more even application, cuts booth cleaning time from once a shift to once a week, and reduces wear on tips and needles. Compressed air and enamel consumption have been reduced 33%, the productivity of each operator is increased, and the finish is improved, with fewer rejects. Total savings in one year: \$50,000.

COST SAVING ITEM—97

Heater Cuts Drying Time 66⅔%

A heater serving two ovens has cut drying time by two-thirds for Porcelain Products, Inc., Parkersburg, W. Va. In the former drier, heat from steam coils was unsatisfactory. The new drier contains a continuous conveyor which passes under a "jet hood" containing nozzles through which high velocity heated air is emitted. Better quality control is achieved and the company now uses the same driers for drying molds. Mold inventory has been reduced by 75%, storage space is released for other use, and the services of two men are made available for other work.

COST SAVING ITEM—98



Solution Speeds Parts Reclamation

Reclaiming rusty formed parts presented a problem to a Michigan auto body manufacturer. Parts were heavily coated with tar and rust when removed from the tar-paper wrapping. Cleaning had consisted of immersing parts in a metal cleaning solution for varying periods, then brushing by hand. To eliminate the manual operation and speed the cleaning process the auto manufacturer tried a combination acid-solvent solution. In three minutes all the rust had dissolved and the tar was easily removed with a spray rinse.

COST SAVING ITEM—99

Product Finishing



Steel Casting Cleaning Costs Cut 50%

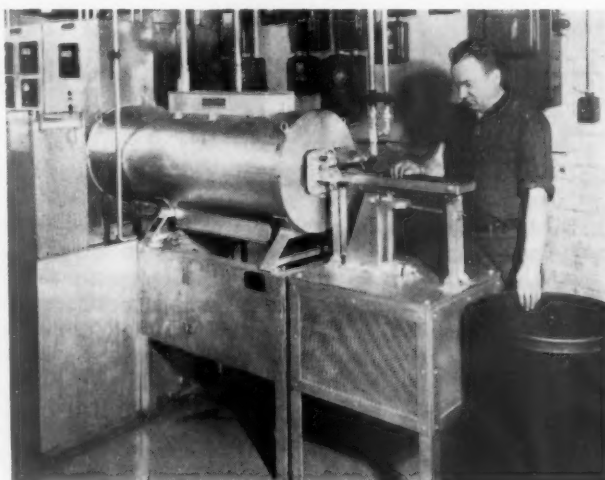
Airless blasting for cleaning very heavy steel castings in two states of condition has made it possible to reduce overall cleaning costs 50% at Electric Steel Castings Company, Indianapolis, Ind. Besides eliminating a large backlog of castings waiting to be cleaned, a swing table has vastly improved surface cleanliness of the metal. A noticeable increase in grinding wheel life has been experienced because of the sand-free condition of the green castings. Inspection is rapid and thorough, and casting defects are immediately apparent, so that no expensive machining operations are performed on casting defective pieces. The metallic abrasive in the machine is used over and over.

COST SAVING ITEM—100

Air Conditioning Cuts Rejects, Improves Product Quality

Porcelain coatings in tanks shown here are mixed and held until they are piped directly to a large spraying department. Nearby firing ovens made the coating mixture too warm and it would begin to harden—clogging pipes and spraying equipment and hurting the completed porcelain finishes. By installing an air conditioning unit, the manufacturer has assurance against shutdowns, has greatly reduced rejects, and obtained better product quality.

COST SAVING ITEM—101



Heat Treating In 75 Minutes— Not Two Days

A new shaker hearth furnace is speeding production for the Master Lock Co. Heat treating of an 80 lb batch of small springs required two days when hardening in charcoal filled containers. The process was not only slow but also costly due to a high percentage of rejects. Now in this new hearth furnace, a similar batch is "bright" hardened in 75 minutes. Each spring receives uniform heat treatment without distortion, thus cutting production costs. The furnace solves the problem of heat treating small parts.

COST SAVING ITEM—102

Product Finishing



Grinding Speeded Up 200%

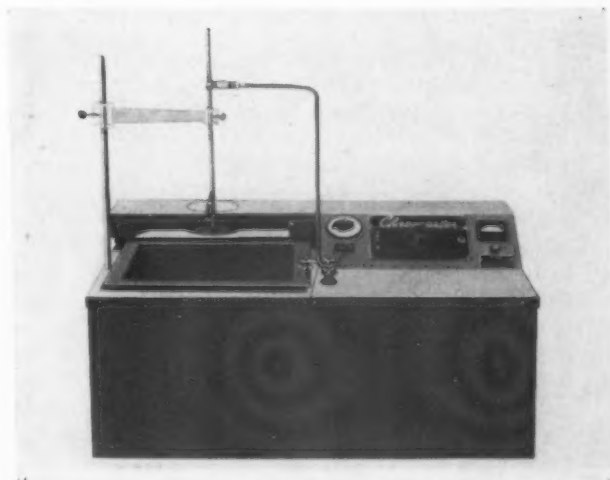
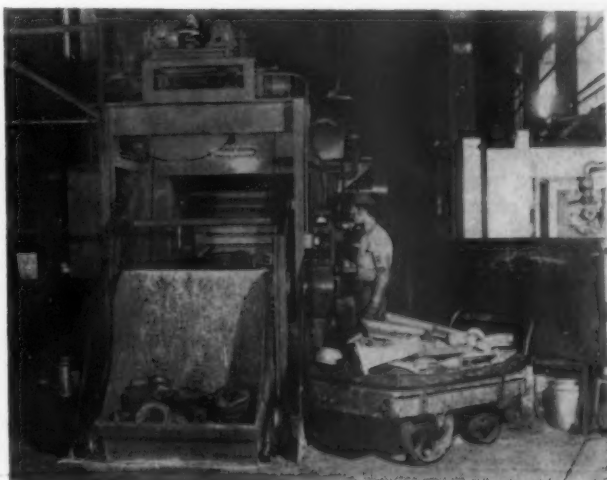
American Radiator & Standard Sanitary Corporation's stamping plant in Buffalo, used a new grinder in conjunction with a 36 grit resin industrial cloth belt has increased production from 8 or 10 pieces per hour to 20 pieces per hour. Previous to using the portable belt grinder, the grinding operation was performed with a cup grinding wheel. This had sometimes been followed by a blending-in with a sander disc.

COST SAVING ITEM—103

Labor Costs Cut 33-1/3%, Power 57%

Castings were formerly cleaned by Gisholt Machine Co., of Madison, Wis., in three tumbling mills. Now one 12 cu ft capacity airless blast barrel does the job more effectively and at lower cost. The machine handles 12,500 lb per hour. The tumbling operation required three workers; the blast cleaning only two. Power requirements are 57% lower because the barrel requires less hp to operate—23 hp compared with 54 hp for the three tumbling mill. Floor space amounting to 210 sq ft has also been saved.

COST SAVING ITEM—104



Plating Salvages 150 Precision Pins

Final inspection in the machine shop of an Eastern manufacturer of business machines turned up 150 precision pins that were 0.005 in. undersize. The whole lot were salvaged by chrome plating them up to size in an industrial shop chrome plating machine. No finish grinding was necessary and the finish proved better for assembly and wear resistance than the original machine finish.

COST SAVING ITEM—105

Product Finishing



Heater Reduces Paint Costs 25%

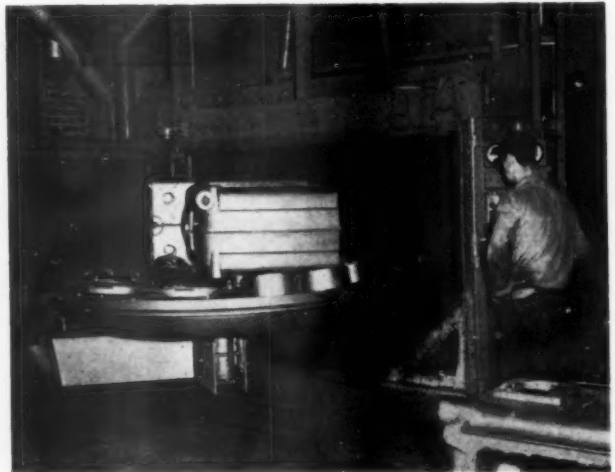
A paint heater using tubular heaters that make the paint heater completely explosion-proof is reducing paint costs by 25% and man-hours by nearly 40% for a number of automotive refinishers. It also improves the quality of the finish. A 24-in., straight length of the tubular heater is bent into a circular shape and cast into the aluminum base which fits on the bottom of the paint receptacle. Application of the new heater may make hot paint spraying a common practice in the field of refinishing.

COST SAVING ITEM—106

Castings Cleaning Time Cut 75%

An airless blasting swing table cabinet installed in the foundry of the Cherry-Burrell Corp., Sheboygan, Wis., has reduced the time for cleaning large gray iron castings by up to 75%. Seven tons of castings are now cleaned on the 72-in work table in from four to five hours, whereas eight to twelve hours per day with the former cleaning method was not enough. One product, a gray iron ice cream freezer base, weighing 640 lb, is now cleaned in only six minutes time. Previously this job took 6½ hours.

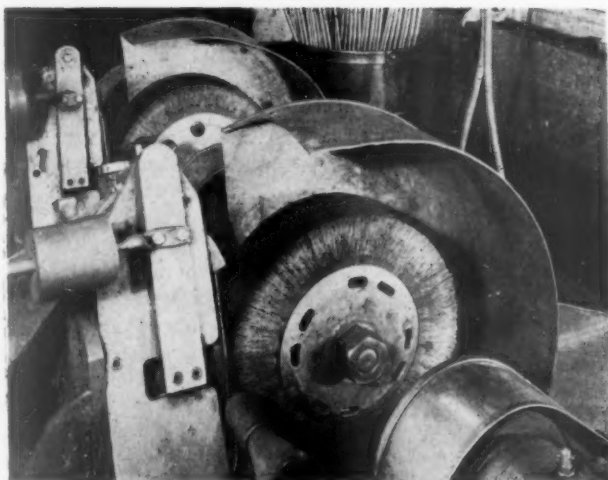
COST SAVING ITEM—107



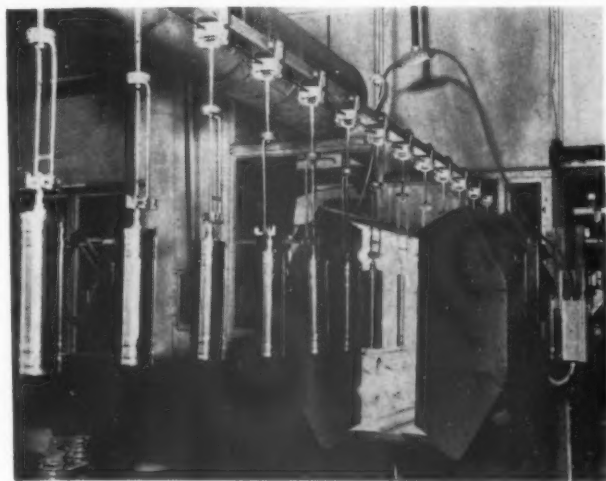
Five-Station Brushing Machine Increases Production 20%

A 20% increase in production, plus a uniform surface finish prior to plating is now being obtained by a large midwest sporting goods manufacturer by utilizing a new brushing method. A five-station machine is solving the problem of removing heat-treat discoloration and surface imperfections on tapered golf shafts. Due to the tapered "step-down" design of the cold-drawn, heat-treated alloy high carbon, seamless steel shaft, it was a problem to get into the "step-down" corners. With the former method, two or three passes were necessary to do the job. With the brush method, only one pass is required to turn out a better finish at a rate of over 1,500 shafts per eight-hour shift, or 10 feet of shaft per minute.

COST SAVING ITEM—108



Product Finishing



Automatic Finishing Transfers Two Men to Other Work

The Fyr-Fyter Co., Dayton, Ohio, saved man-hours when they installed an automatic finishing system which included infrared radiation. The extinguishers go through an infrared oven 3' 8" long, lamped 375 watts for 9 kw connected load. The system is entirely automatic. An electric eye controls automatic spray units. After spraying, the conveyor carries the extinguishers through the oven. Drying time is approximately one minute. Because of the automatic set up, the Fyr-Fyter Co. was able to transfer two people from finishing to another department.

COST SAVING ITEM—109

Grit Cloth Outlasts Coated Abrasives Six Times

A New England stainless steel fabricator was sanding stainless steel in two operations. He was using a #80 sand disc for roughing, followed by #120 grit coated abrasive paper for finishing. This company now uses #280 gritcloth to do the job in one operation. The gritcloth lasts six times as long as ordinary coated abrasives.

COST SAVING ITEM—110



Week's Job Now Done in 6 Hours

Cost savings by Hotpoint Inc., from use of a shaker hearth furnace for heat treating one type of switch spring alone have in six months equalled the cost of the furnace. Formerly it took one week to produce 40,000 springs; now the same job is done in six hours. Also, a high rejection rate has been practically eliminated.

COST SAVING ITEM—111

Materials Handling



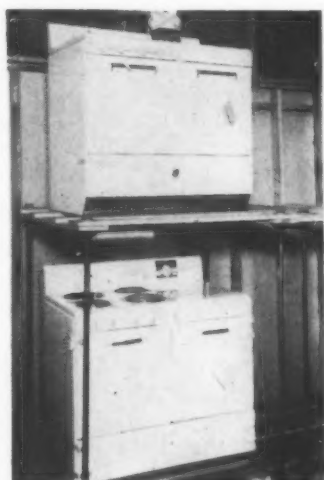
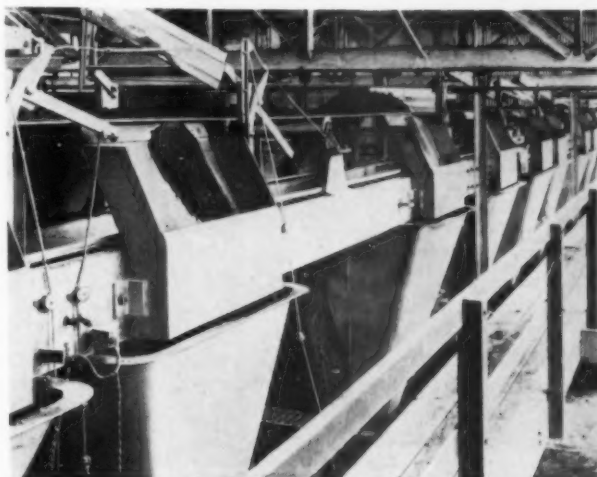
EVERY movement of goods of any kind in today's factory costs money—at least 20% of manufacturing costs in the average plant, according to materials handling authorities, and considerably higher in most plants. Considering this situation, and the rising curve of labor costs, it becomes obvious that materials handling operations offer a fertile field for cost reduction activity. In the following pages are factual reports on how a wide variety of industries invested in many types of materials handling equipment and achieved the same results—lower handling costs, reduced labor costs, greater storing space, and all-around increased efficiency.

Materials Handling

75% Production Increase For Modernized Foundry

A west coast foundry installed an up-to-date sand handling system—consisting essentially of troughed belt conveyors, an automatic sifter, conveyor, mullers for sand reconditioning, conveyor to bucket elevator, etc. Through this modernized set-up, the foundry achieved a 75% increase in production, had more efficient operation, and was a cleaner, pleasanter place to work than before.

COST SAVING ITEM—112



Materials Storage System Saves \$15,600 In Handling Costs

Wieboldt Stores, Inc., Chicago, was able to reduce handling costs by \$15,600 annually through installation of a tiering system engineered for each individual materials storage problem. Also through better use of its cubic area, the store saved 15.2% of space in the furniture area, and 10.4% of its space in bedding stockkeeping area.

COST SAVING ITEM—113

Conveyor Belt Lasts Two Years: Previous Performance—1 Month

Ordinary belts carrying steaming hot sand, from molds used to make steel castings, stood the sizzling sand for only 30 days at a busy foundry that works 24 hours a day, 7 days a week. The foundry installed a belt made of special heat-resisting rubber for carrying such things as hot sand, lime or nitrates. Instead of ordinary fabric in the belt, glass fabric is used to make a belt that can stand heat as high as 500 F. The first such belt purchased far outlasted any others, remaining in service for two years.

COST SAVING ITEM—114



Materials Handling



Palletizing Doubles Storage Space

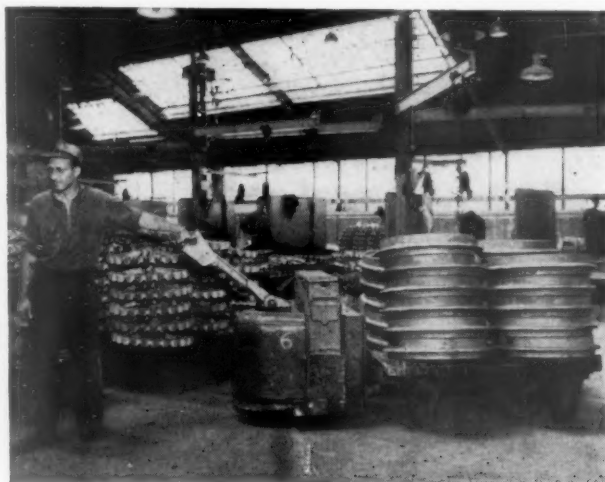
The North Philadelphia plant of General Baking Co. stacks its incoming bags of flour on pallets instead of skids and has replaced its hand trucks with 2,500-lb capacity fork trucks. Formerly, 100-lb bags of flour were stacked on skids, two bags to a layer, eight to ten layers high—a total of 16 to 20 bags per load. Now, these bags are stacked three bags to a layer on 33" x 48" pallets to a total of 24 bags per load. In addition, because the flour is now stacked on pallets, the loads can be stacked two tiers high, enabling 140% to 200% more flour to be stored in the same space.

COST SAVING ITEM—115

Rotating Clamp Saves \$5,435 In Year

The M. B. Austin Co., Northbrook, Ill., manufactures 500 varieties of electrical items. During various plant processes, these small pieces are carried and stored in 55-gal. drums. Previously all of the drums were handled by fork truck and dumped manually. A new method of handling was devised in which a 360° rotating clamp handles the drums. This eliminated need of another machine and operator, resulting in direct savings of \$5,435.00 a year. The handling rate has been more than doubled and exactly positioned drums have reduced storage area 33%.

COST SAVING ITEM—116



Electric Trucks Cut Castings Handling Time 50%

A Chicago foundry cut in half the time required for handling castings from one operation to the next by substituting five electric trucks for a much larger number of hand lift trucks. As these movements are performed by men who also have other duties, there is much less interruption of other work. Fewer trucks in the aisles is always a desirable condition in a busy foundry.

COST SAVING ITEM—117

Materials Handling



\$73,440 Yearly Saving In Labor Costs

The Water Heater Division of A. O. Smith Corp., Kankakee, Ill., makes a complete line of gas and electric water heaters. All operations in the processing, storage or shipment of the heaters were palletized. This led to unreasonable losses through breakage, and delayed movement of the palletized crates. New equipment was introduced to more completely mechanize operations—attachments to fork lift trucks consisting of 130" high low stack uprights, universal couplers, mechanical crate handlers and side shifter devices. This resulted in a cut of the shipping and warehousing crew from 23 to 6, the saving of 40,000 manhours yearly, and total annual savings of \$73,400.

COST SAVING ITEM—118

Hoist Earns \$6.00 With Each Lifting

An eastern manufacturer installed a 10-ton hoist in his shop and found that it earned \$6.00 every time it lifted a bundle of sheet steel. This hoist permitted buying steel in larger bundles and handling them in one bite. It cut demurrage charges, minimized loading dock congestion, moved material to production processes faster, increased usable floorspace, and released two men for production work.

COST SAVING ITEM—119

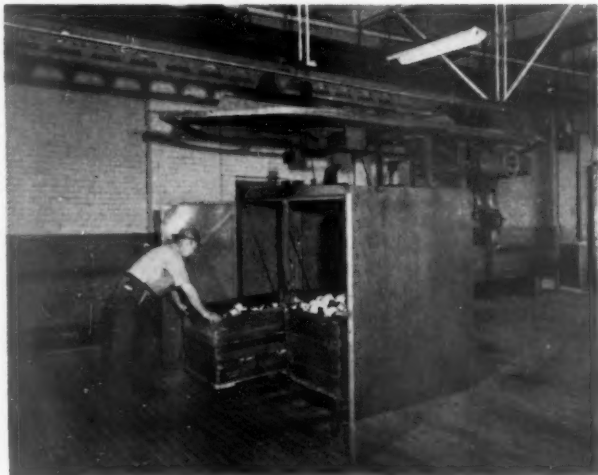


One Man Does the Work of Four In Less Than Half the Time

A Louisiana bottling company, which runs delivery routes from three different warehouses in three different cities, operates a lift truck at each location. By handling cases of soft drinks on pallets, with a fork lift truck, one man and a delivery truck can make a complete turn around in one hour, where previous methods required four men and more than two hours time. Additional savings in warehouse space have been made possible by high stacking.

COST SAVING ITEM—120

Materials Handling



Automatic Dispatch System Paid For in 15 Months

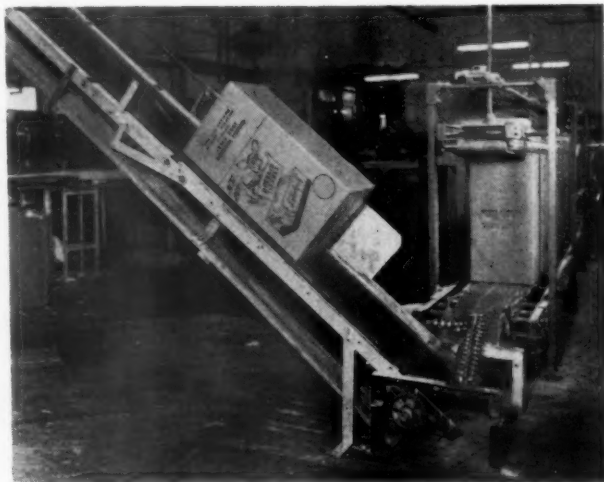
A North Carolina textile mill installed a tram-rail automatic dispatch system to handle boxes of bobbins from the spinning department on the first floor of one building to the twisting department on the second floor of another building. Because of time saved, the entire cost of the equipment was paid for in less than fifteen months. The vast amount of tedious trucking formerly required has been eliminated.

COST SAVING ITEM—121

Belt Saves \$400 A Month

Conveying filled cartons of facial tissues up a 45° incline to the storeroom posed tough "pile-up" problems for a Massachusetts manufacturer. Even when slats and cleats were used on the old cotton belt, it still took a man standing at the foot of the incline to keep cartons from falling off or slipping back. A conveyor belt, with tiny rubber "fingers" on the belt surface to grip cartons and prevent slippage solved this "package-jam." The need to watch for falling cartons has been eliminated. Savings: \$400 a month.

COST SAVING ITEM—122



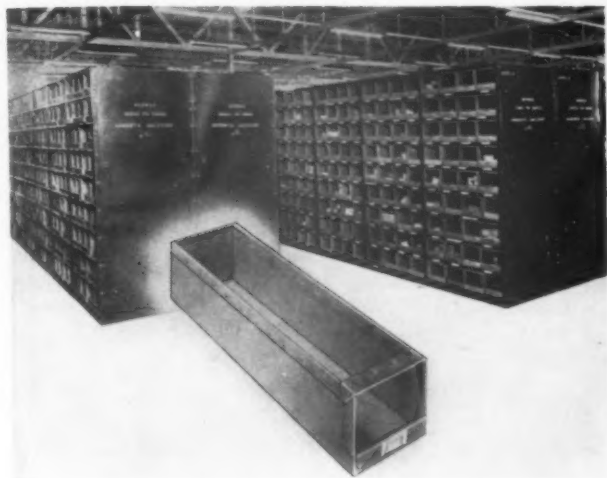
Fork Truck Does Work Of 15 To 25 Persons

Coal for the boiler house, dirt for fill, welders for overhead maintenance work, concrete for walls, and miscellaneous bulk materials are carried by a 4,000 lb fork truck with a 12 cu. ft. scoop at the Norristown State Hospital, Norristown, Pa. Formerly, 15 to 25 patients with wheelbarrows, working six to eight hours per day were required to supply the boiler house with coal. Now, the truck operates five to six hours per day and supplies all the coal used in the boiler house leaving free time for it to perform other chores during a normal day.

COST SAVING ITEM—123



Materials Handling



Savings on First Inventory Pay for Bin Boxes

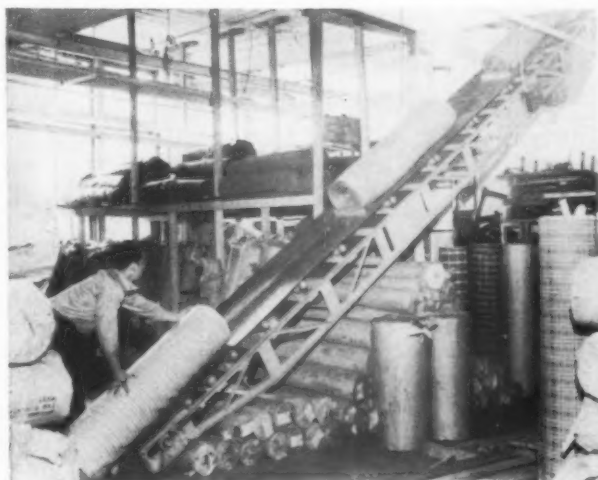
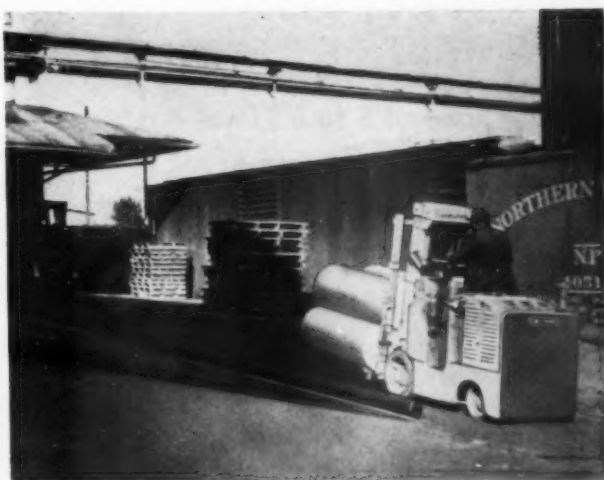
The parts depot of a large automobile manufacturer installed new bin boxes made of chemically hardened corrugated board. The containers save the cost of bin dividers and have a riser front to greatly increase bin capacity. Now, instead of scooping out contents of bin at inventory time the entire box is easily pulled out and weighed. As each stored part has been given a multiple, and the tare weight of the bin boxes is constant, there is a tremendous saving in inventory time and effort. In the original installation the complete cost was paid out of labor savings on the very first inventory.

COST SAVING ITEM—124

Carloading Time Cut from 28 to 1.3 Manhours

Eight men with hand trucks used to take 3½ hours to load a boxcar for the American Finishing Co., Memphis, Tenn., which handles 8 to 10 million yards of cloth monthly. Now, a fork truck operator and one helper do the job in 40 minutes—a 95% reduction in manhours.

COST SAVING ITEM—125



Conveyor Saves 6½ Manhours Daily

Moving rolls of seat-cover fabric from floor to floor formerly required 12 manhours per day at the Howard Zink Corp., Passaic, N.J. Installation of a trough conveyor brought this time down to approximately 5½ manhours. The conveyor paid for itself in less than a year—plus saving time and labor.

COST SAVING ITEM—126

Materials Handling



Truck Ups Warehouse Capacity 50%

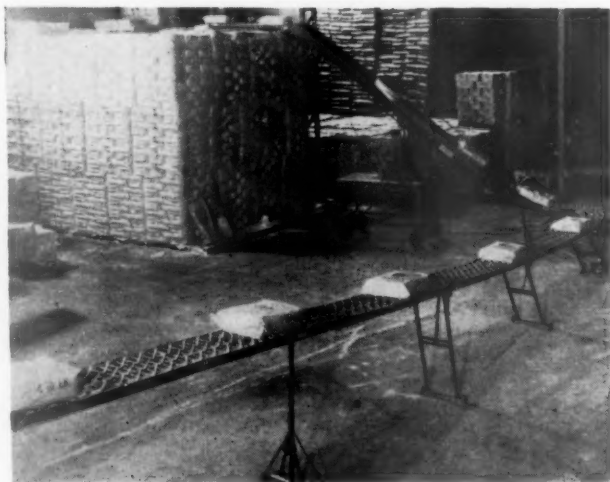
The "postage stamp" storage building of Sandusky Bay Pipe & Supply Co., Sandusky, O., handles heavy traffic in loads and personnel all day long. Materials handling was repetitious, muscle-straining. Use of a 2,000-lb. fork truck as a "mobile elevator" permits utilization of a wide wooden balcony nine feet above the floor. Storage capacity is up 50%, excessive rehandling is eliminated, loading and unloading of carriers is facilitated.

COST SAVING ITEM—127

Ships Loaded 5 to 6 Times Faster

A Texas stevedoring company, using manually filled buckets, lifted by the ship's boom and tackle, was unloading potash from box cars into ships at the rate of 12 to 13 tons per hour. Now, this conveyor system takes the potash from cars to ship's hold at a rate of 70 tons per hour, reducing handling costs from \$3.00 to \$1.00 per ton.

COST SAVING ITEM—128



Materials Handling Installation Saves Refinery \$384.00 Daily

Warehousemen at the Supreme Sugar Refinery, Supreme, La., used to truck bags and bales of sugar by hand from the packing room to warehouse stacks or into rail cars and trucks. Heavy plant output caused a manpower problem. The company installed two tandem horizontal belt conveyors, 450' of gravity conveyor and curves, several movable belt conveyors. Releasing of men for other jobs has saved \$384.00 every day in wages; operating expenses are about 30% lower; bag breakage and damage has been reduced 75%; truck loading has been speeded up 50%.

COST SAVING ITEM—129

Materials Handling



Industrial Truck, Palletization System Save 40% of Storage Space

A single industrial truck and a palletization program has achieved a 40% saving in storage space at the Standard Brewing Company in Cleveland, Ohio. Prior to palletization, cartons could be stored only 10 high, using hand labor. Bottle cases are now loaded 72 to a pallet and are stored up to 23 cases high, using driver-led electrically-powered truck. The palletization system not only speeds the work, but because of standard pallet loads greatly simplifies inventory taking.

COST SAVING ITEM—130

Boosts Melt 67%; Cuts Manual Lifting 80%

A large electric company modernized its foundry with the installation of mechanized sand and castings handling equipment—and got greater capacity in the same building at lower cost. The company now melts 100,000 lbs. of gray iron in one shift, compared to the former 60,000 pounds. Working conditions are so improved that the right kind of labor is attracted to the job. Manual lift has been reduced from 1470 to 294 tons per day.

COST SAVING ITEM—131

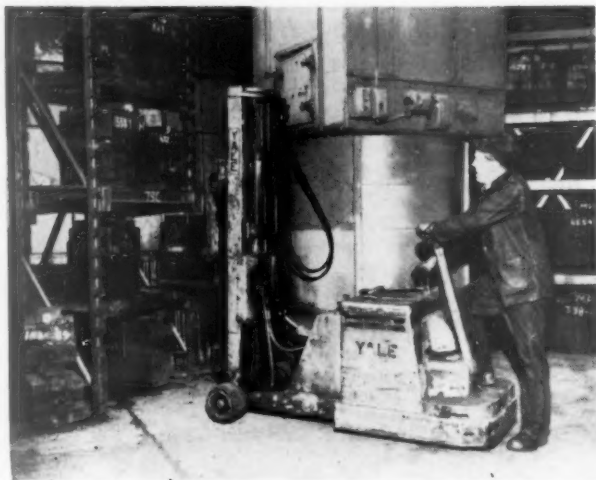


Two Men Do The Work of Six

With the aid of a handpiler, a flour, feed and meal manufacturer in Lexington, Ky., is using two men to perform the same labor previously done by six. In addition, the men work more steadily and faster. The conveyor also possesses a safety element as the men are not required to raise the 100-lb. bags as high as formerly and thus the possibility of a strain is reduced.

COST SAVING ITEM—132

Materials Handling



Storage Space Needs Reduced 75%

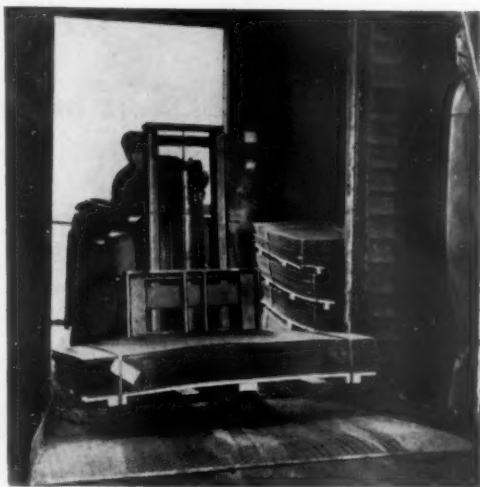
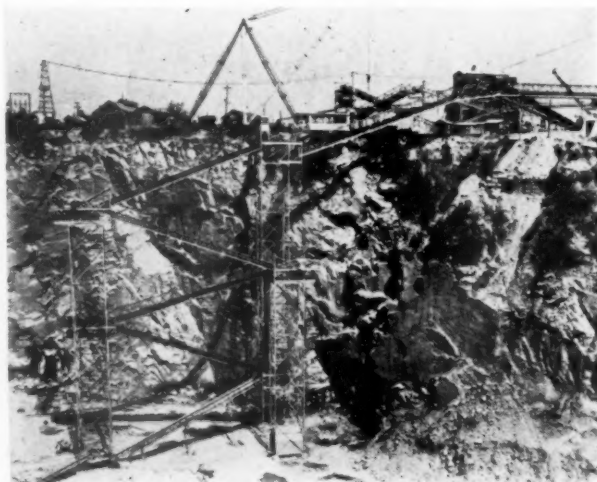
Pittsburgh Forgings Company has reduced the area needed to store dies from 6,400 sq. ft. to 1,600 sq. ft. Under the old system, dies were stacked two high with each pair resting directly on the pair beneath it. These dies, even though placed as closely adjacent to each other as possible, still consumed a storage area of over 6,400 sq. ft. Under the new system, which uses lift trucks, the dies are stacked in specially designed racks which are placed on both sides of the aisle in a saw tooth arrangement reducing space needed to 1,600 sq. ft. and facilitating handling of dies in and out of storage.

COST SAVING ITEM—133

Rubber Escalators More Than Double Hauling Capacity

A rock product company used to haul crushed rock from its quarry in metal pans attached to a moving cable. The method was slow, costly and there were frequent cable breakdowns. The moving cable was replaced with a series of five rubber escalators. Moving belts carry rock to the bottom belt in the staircase which dumps it onto the next and so on up to the top—a distance of 268'. Today the rubber escalators haul 400 tons an hour out of the quarry—2½ times as much as before—without delay or trouble.

COST SAVING ITEM—134



Mechanical Handling Saves \$2,500 Yearly For Tool Maker

Carrying 4,000-lb. loads at a time, this fork lift truck unloads and places in storage over 25 tons of sheet steel in just 1¼ hours—a time saving of 15¾ hours per car for The Dumore Company, Racine, Wis. By converting to mechanical handling, this small-tools manufacturer saves almost \$2,500 yearly in this handling operation alone.

COST SAVING ITEM—135

Materials Handling



Oblique Pallet Stacking Increases Capacity 16%, Speeds Work 25%

A change to oblique pallet stacking increased a warehouse operator's pallet capacity by 16% and speeded up spotting and withdrawal of loads by 25%. Before the reorganization the aisles were laid in a criss-cross arrangement with two main intersecting aisles 14 feet wide running the full length of the warehouse. Sub-aisles ran at right angles to these main aisles to form a checker-board pattern. The change to oblique stacking called for one main center aisle 10 feet wide running the full length of the area and an eight foot wide aisle parallel with the loading dock inside the building. The change also allowed the use of a 4,000-lb. capacity fork truck instead of the former 2,000-lb. truck, cutting the number of hauls in half.

COST SAVING ITEM—136

Electric-Powered Fork Trucks Reduce Handling Manhours 75%

Handling manhours have been reduced 75% by the British Columbia Ice & Cold Storage Company, Vancouver, B. C., through the use of electric-powered fork trucks. Now, four trucks plus operators do as much work as 16 men did by manual means. In addition, the company can now take advantage of vertical storage area. Physical labor is reduced, and doors to cold storage areas are opened for shorter periods because loads are stacked more quickly.

COST SAVING ITEM—137

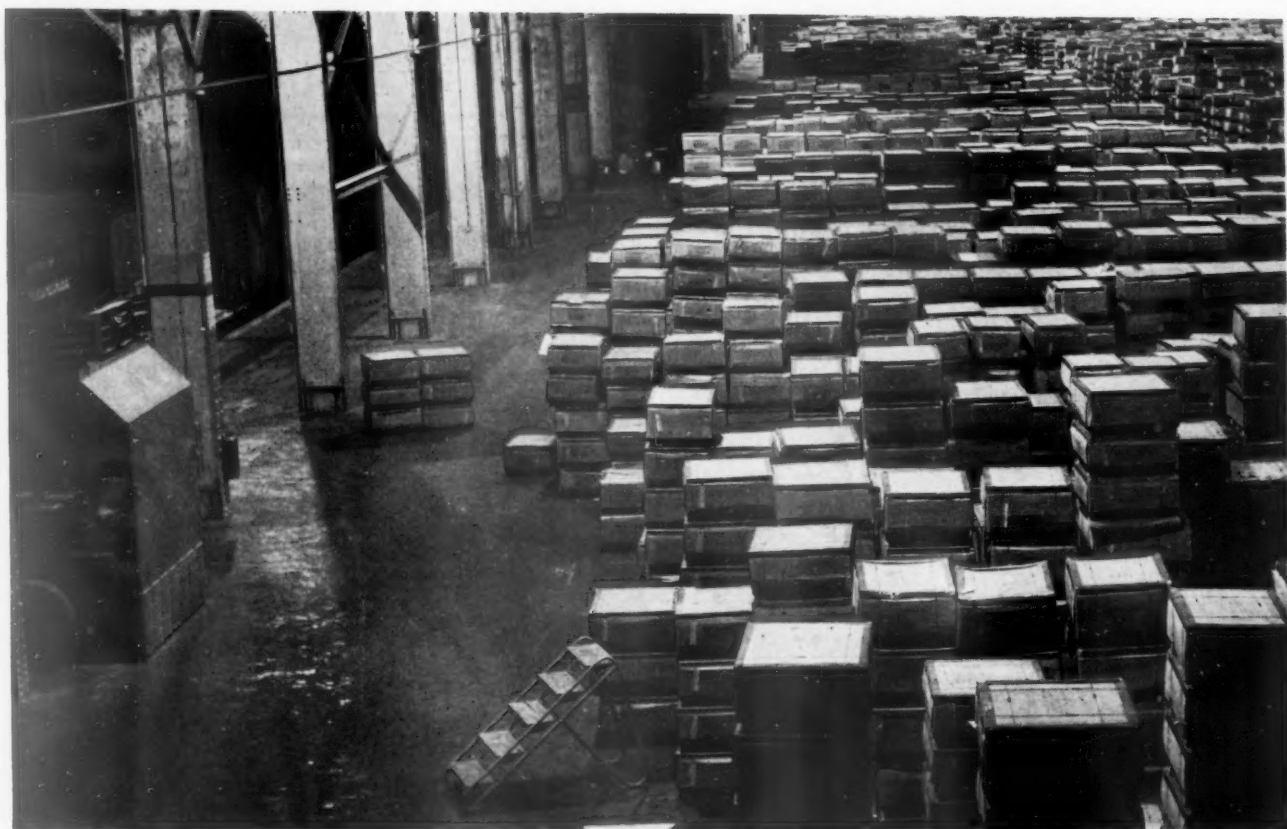


System Saves On Handling, Labor, Storage, Production

To move cartons from packing lines on third and fourth floors to storage areas in an eight story building, a Chicago coffee manufacturer installed a gravity and belt conveyor system. These are the results he obtained: \$65.00 daily saving in handling costs; 50% increase in shipping capacity; increase of 40% in first floor capacity; safer plant conditions; shorter shipping and receiving time; 20% increase in production.

COST SAVING ITEM—138

Packaging and Shipping



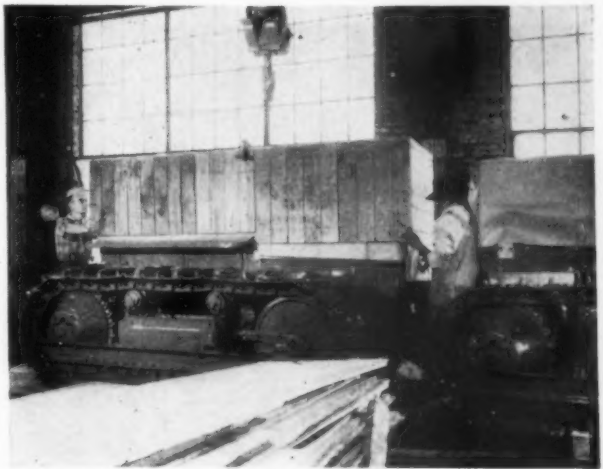
DAMAGE claims, high freight rates, excessive packaging time—these are the headaches that plague purchasing and traffic departments throughout industry. But the battle against these negative factors in getting goods from one destination to another is being fought successfully in the development departments of leading manufacturers of packaging and shipping supplies. The losses will never be completely eliminated, but they are being cut down substantially in many instances—just as shown in the authenticated case histories in this section. The ideas shown here not only bring about savings for users, but make for a more attractive, saleable package in many instances.

Packaging and Shipping

Wirebound Hood Protects Exports: Savings Are \$45,900 Annually

International Harvester Co. turned to the use of a wirebound hood at its Chicago tractor works to protect tractors against pilferage and damage in export shipment. The hood covers engines, seats, and removable parts. The company estimates the move saves \$45,900 annually by: completely eliminating pilferage, reducing packing time 10%, reducing initial container cost 42%, reducing shipping container weights by an average of 47%.

COST SAVING ITEM—139



Packing Expense Cut 35%

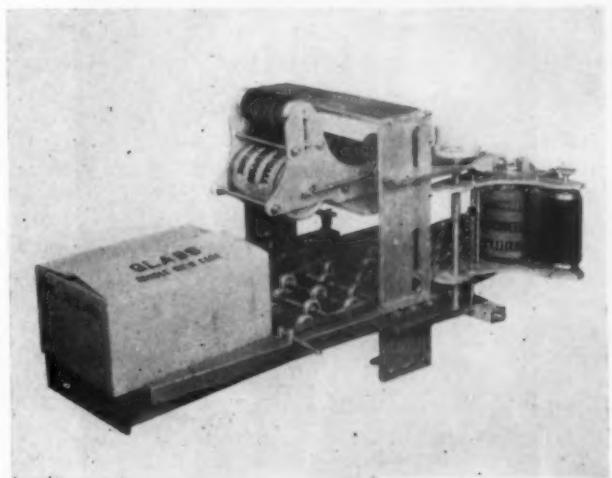
The porcelain insulators manufactured by the Locke Dept., General Electric Co., Baltimore, Md., were formerly packaged in individual cartons. Loading groups of insulators on a returnable pallet and securing the entire unit with steel strapping has eliminated the excessive breakage of previous fasteners and cut packing expense 35%.

COST SAVING ITEM—140

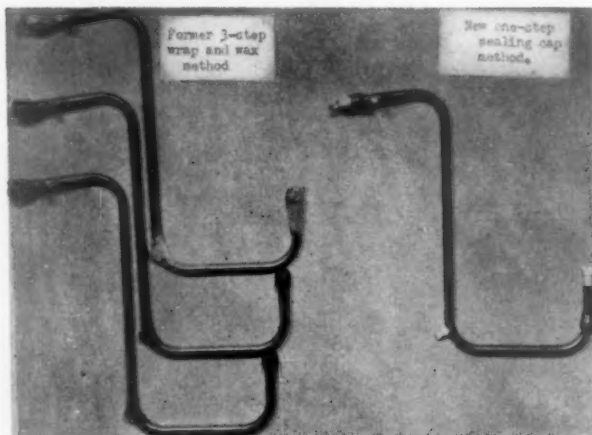
Auto-Printer Eliminates Two Men On Marking Line

By using an automatic carton marker, and eliminating hand stencilling, Park & Tilford was able to eliminate two men on each line who formerly handmarked cartons. This large carton and case marker is furnished attached to a 3' length of roller conveyor so that it can be bolted to an existing conveyor line or it can be modified for attachment to a sealer. It will automatically imprint a clean, sharp legend when a moving carton contacts the printing drum.

COST SAVING ITEM—141



Packaging and Shipping



Costs Cut 86%, Production Increased 11 Times

A large automotive manufacturer must seal spare part gas lines for trucks for protection against moisture and dirt during shipment. Use of plastic sealing caps which shrink tightly after application has saved 86.1% of the sealing cost and increased production 1,100% over the former three-step method involving two paper wrappings and a wax dip process.

COST SAVING ITEM—142

Packaging Time Cut 15%

Reinforced gummed tape is used by Malden Knitting Mills, Malden, Mass., to seal even big cartons, because it speeds packaging 15% and the cartons stay sealed. The tape is reinforced to give necessary strength and support for cartons containing 120 lbs. of garments. All seams are closed to give dustproof feature that previous method did not offer.

COST SAVING ITEM—143

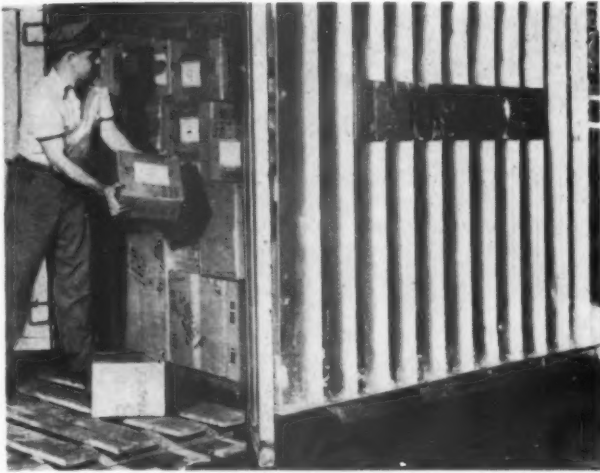


Tare Weight Reduced 75%

Using wirebound crates to pack its wall furnaces, Kresky Manufacturing Co., Petaluma, Calif., reduced shipping container tare weight by 40 lbs., or 75%. Displacement was reduced by about 5%, to permit more economical car-loading, and shipping damages were cut to the vanishing point.

COST SAVING ITEM—144

Packaging and Shipping



Stops Pilferage: Saves 1¢ Per Record

A problem in shipping lightweight consumer goods abroad is how to prevent pilferage during many handlings. Decca Records, Inc. solved the problem by packing records and albums in cardboard cartons instead of heavy wooden boxes, which were previously required. These cartons are stowed in welded steel containers, with a 275 cu. ft. capacity. Not only has this made damage claims negligible but a saving of 1¢ per record is effected in packaging costs alone.

COST SAVING ITEM—145

Packaging Breakage Ended

No record of breakage due to packaging has been recorded by The Glidden Company since using an asbestos cushioning material to protect shipments of its wood bleaches. In addition to acting as a shock absorber, the material will drink up the liquids in case of breakage and prevent the highly volatile solutions from mixing and exploding.

COST SAVING ITEM—146



Stapling Machine Closes 25% More Cartons

Mullins Manufacturing Corp., Warren, Ohio, manufacturers of "Youngstown Kitchens," uses a stapling machine for closing full overlap cartons, containing kitchen cabinets and sink tops, and finds the operator can seal up to 25% more cartons per hour. Equally important, the stapled cartons are more rigid and stand up better in storage. The machine runs 16 hours a day and seals up to 150 cartons per hour. Previously the cartons had been sealed with gummed tape.

COST SAVING ITEM—147

Packaging and Shipping



Tape Costs Cut 12½%

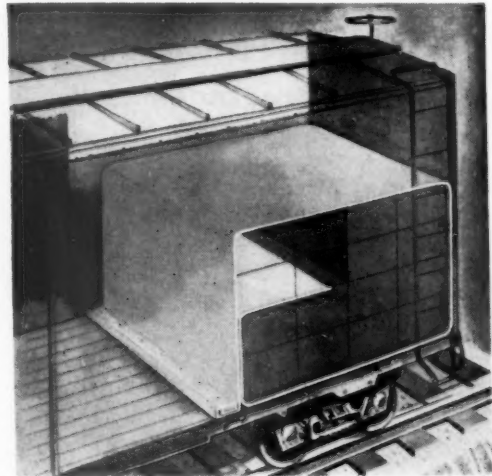
Shelby Dinettes, Inc., manufacturers of plastic-chrome dinettes and chrome chairs at Houston, Texas use tape to seal the large corrugated boxes in which they ship their products. Previously they had used a tape which had to be cut in long strips to hold down the flaps of cartons measuring 60". The superior sticking tape Shelby now uses permits a shorter overlap of tape on each side of the carton. This gives a tremendously speeded up seal and saves 12½% in tape usage.

COST SAVING ITEM—148

Special Paper Cuts Damage Claims In Half

Car unitizing—a simple process of binding a quantity of cartons into a single unit with a continuous sheet of special double-creped paper—is Welch Grape Juice Company's answer to freight damage from jarring traffic impacts. Several hundred cartons are bound into a single unit which resists shifting and shock, reduces bottle breakage and the expensive mess resulting from spilled contents. By the method, Welch has reduced its damage claims by more than 50%.

COST SAVING ITEM—149



Less Material, Better Packaging

Warner Electric Brake Co., is using reinforced tape on two different packs: (1) a 14" x 14" x 14" corrugated; (2) a 14" x 14" x 28" corrugated. Both boxes have a double flap top and bottom. Former method of packaging was to use 60# sealing tape on the top and bottom in the standard method and then metal strap—2 straps—banding top and bottom. By using one complete band of 3" tape which seals both the top and bottom flaps and bands the box for reinforcement, Warner has reduced labor and material costs and obtained a better pack.

COST SAVING ITEM—150

Packaging and Shipping



Three Men Do The Work of Five

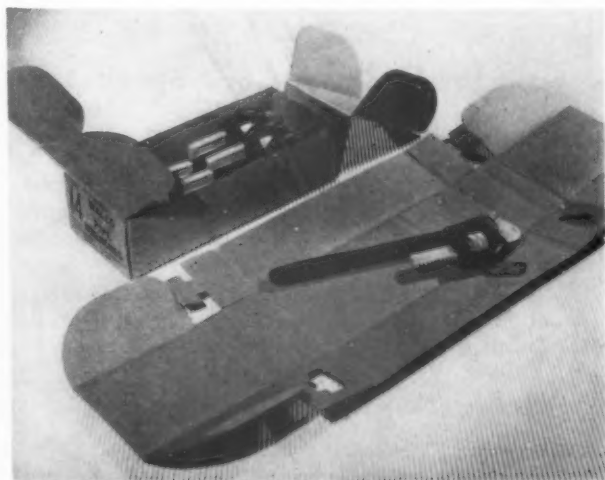
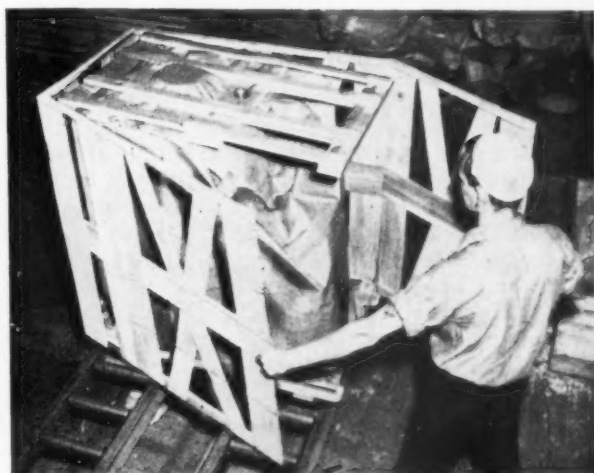
Replacing the old hand-wrapping operation with large printed bags has enabled the Wood Conversion Company of Cloquet, Minn., to cut its labor force in the packaging of balsam-wool batt insulation by 40%. With the former method 15 men on each of three shifts were required. Paper bags, and simple machinery to partially compress the batts and insert them in the bags bring labor requirements down to nine. The flat rectangular package also takes less space which means freight savings.

COST SAVING ITEM—151

Packing Costs Cut, Sales Boosted

Purchasing wirebound crates instead of making its own reduced over-all packing-for-shipment costs on domestic unit heater boilers for L. O. Koven & Bro., Inc., Jersey City, N.J. Cost of crate for the larger model boiler went from \$11.12 to \$10.75, for the smaller, from \$8.01 to \$7.45. Reduced dimensions—making it easier to slide fully crated boiler into customer's basement—boosted sales on highly competitive item.

COST SAVING ITEM—152



Saves 40% On Box Costs, 80% On Labor

A sturdy, efficient one-piece corrugated box that protects the product in shipment and identifies it quickly on the dealer's shelf saves 40% on box costs and 80% in packing labor for the Walworth Company, Boston, Mass. Accommodating six pipe wrenches, this die-cut corrugated box is simple to set up. Its design permits its removal from dealer shelves without hazard of the wrenches falling out.

COST SAVING ITEM—153

Packaging and Shipping



Plastic Carboy Bottle Saves \$4,500 Annually

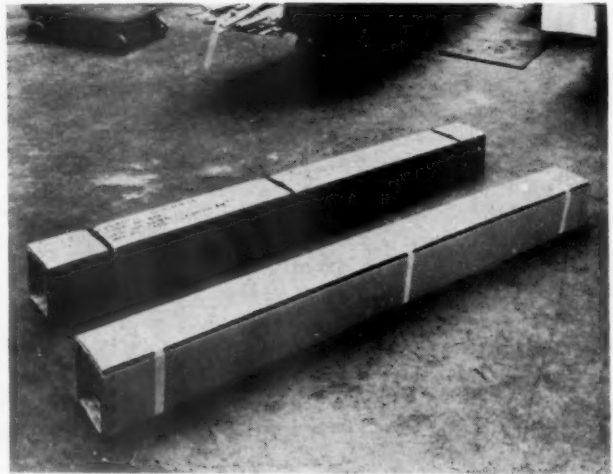
Use of the unbreakable, lightweight polyethylene carboy bottle is saving a large refrigerator manufacturer an estimated \$4,500 annually in intra-plant operation. The company uses the 13-gallon size to avoid breakage in the handling of muriatic and sulphuric acid. Bottle on the right is 6½-gallon industrial carboy.

COST SAVING ITEM—154

Packaging Labor Costs Cut 75%

Pyramid Moulding Products of Chicago, Ill., were packaging molding products in wooden cases, using a metal strapping to reinforce the case. It was costing approximately \$9.00 per unit, and the packaging line was falling behind in application. The company changed the method of pack to use a double wall corrugated box testing 600 lb. and have replaced the metal strap with filament-reinforced tape. Result: material costs have been cut more than 50% and labor costs more than 75%.

COST SAVING ITEM—155

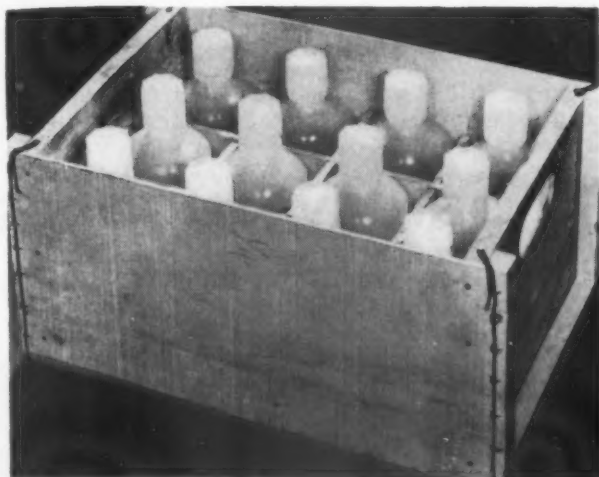


Knotted Draw Cord Speeds Packing 30%

Florida citrus houses have speeded up packing about 30% through the introduction of a protruding knotted draw cord in consumer size open mesh fruit and vegetable bags. This eliminates old fashioned string closures which were originally sewn in the side seam of the bags. The new knotted draw cord can be grasped from any side of the bag.

COST SAVING ITEM—156

Packaging and Shipping



Bottle Case Cuts Freight Costs

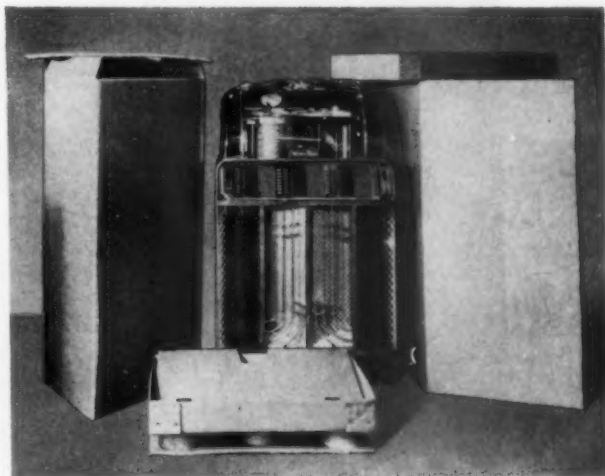
A lightweight wirebound container, primarily developed for handling bottled battery-acid for the Firestone Tire and Rubber Co., Akron, Ohio, cuts weight approximately 20% and reduces costs. The container is an open-top "wirebound" compartment for holding 12 bottles and may be used to handle a variety of liquid chemicals and solutions in bottles. By "engineering" a lid to the container, it can be adapted to shipping purposes. Hand holes are provided for manual handling and a dark-colored, acid-resistant coating is applied to protect the case for long service.

COST SAVING ITEM—157

Corrugated Container Saves Time, Cost and Storage Space

Savings result in packaging time, shipping cost and expensive storage space through the use of a special corrugated power pack for shipping and storing 600 lb. automatic phonographs made by the Rudolph Wurlitzer Company, North Tonawanda, N. Y. The new packaging replaces a wooden shipping case or cleated plywood container. This is the first time that an automatic phonograph has ever been shipped in a corrugated container. Seven different kinds of die cut and scored interior packing hold the machine firmly in place and protect its fragile parts. Interior packing is so strong as to permit a second machine to be safely placed on top of a completely packaged unit.

COST SAVING ITEM—158



Shipping Costs Cut By Cartons, New High Tensile Tape

The use of a high tensile tape to close and reinforce cardboard shipping cartons brought about a large saving in shipping costs for the Hawker Manufacturing Company, Dayton, Ohio, by making it possible for them to eliminate the use of wooden crates for shipping their steel lathe parts. The company tried banding, but found that it cut or crushed the cartons, and was hard to handle, bulky to store and its application demanded special tools. The high tensile tape with non-split backing, plastic coated to resist weather, provides sure, lasting hold without creep or edge roll, and can be applied six times faster than banding, without the use of special tools.

COST SAVING ITEM—159



Maintenance and Safety Supplies



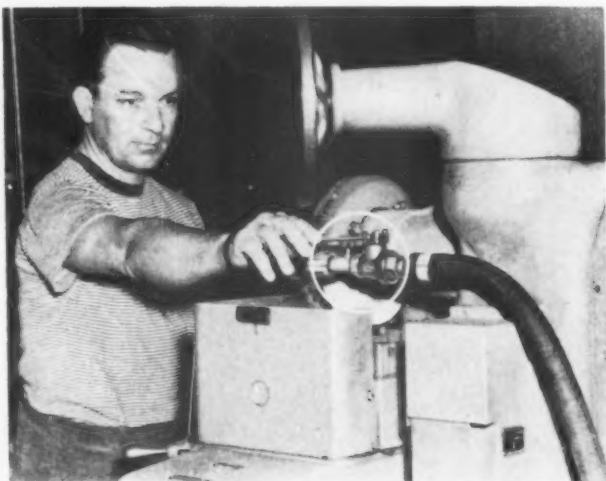
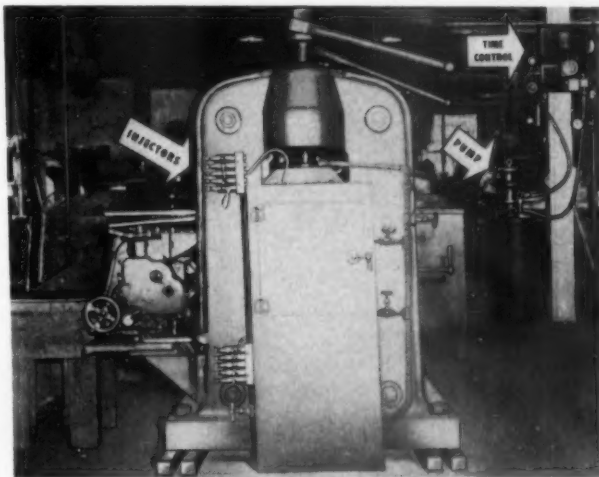
"**M**AINTENANCE now accounts for from 8% to 15% of total operating cost in representative industries." . . . "Preventive maintenance is credited with increasing the productive capacity of existing equipment by as much as 5% to 10%." These authenticated reports on the vital role of maintenance in industry should give pause to those who have considered cost-saving opportunities in this field as relatively unimportant. Equally, they should give satisfaction to those who are applying the same value-seeking techniques to buying maintenance supplies as they use on materials and production supplies. Examples of how money has been made through maintenance purchases are shown in the following pages. Savings through safety supplies are included.

Maintenance

Bearing Life Prolonged 1,500%

A new lubricating system was installed on four Farrel-Birmingham 16" x 24" brass rolling mills by the Miller Company at its rolling mill division in Meriden, Conn. The system includes an air-operated drum pump and a circuit of injectors serving 80 bearings simultaneously. Since installing the system three years ago, bearing life has been increased 1,500% and power consumption reduced 30%. Mill shut-down for manual lubrication has been eliminated, and heat in the mill, previously developed from friction, has been reduced to a minimum.

COST SAVING ITEM—160



Valves Replaced Only Once A Year

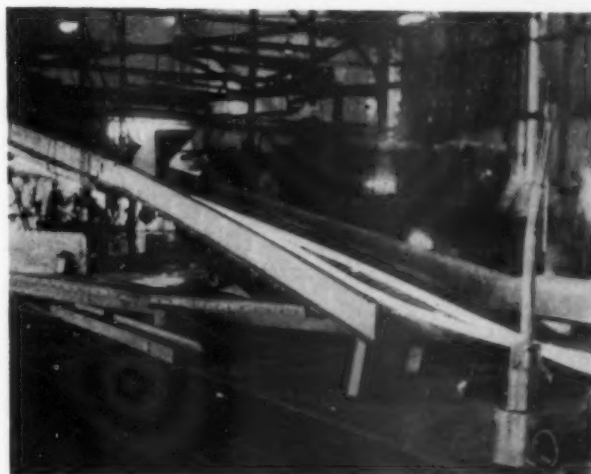
Remington Rand, Inc., has operated ball valves on this surface grinding machine 500 times a day without maintenance for over a year. Previously maintenance men were replacing or repairing the valves at least once a week. Picture shows a man opening one of these valves that controls the flow of the coolant. The valve allows a full volume of water on the wheel giving it longer life and making it possible for the machine to produce better quality products. Because of its leak-proof service, full round flow, and quick opening and closing features, production has almost doubled.

COST SAVING ITEM—161

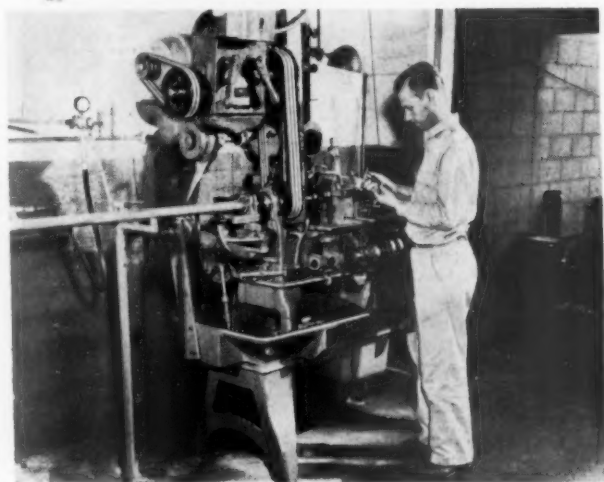
Grease Saves Mill Approximately \$1,300 Per Year

White hot steel bar is held temporarily on the lower part of a chute before going through the last die and rolls in an eastern mill. Ball bearings supporting the rollers on which the bar moves become extremely hot. Despite frequent lubrication, the bearings lasted only about three weeks, with replacement costs at about \$25 a week. Since switching to a specialized grease, the mill has not lost a single bearing through faulty lubrication, and savings have been approximately \$1,300 a year.

COST SAVING ITEM—162



Maintenance



Replacing Gear With Rope Drive Boosts Production 50%

The automatic turret lathe at the R. & E. Engineering Co., Culver City, Calif., was formerly driven entirely through noisy gears. When the gear drive broke down and needed an expensive repair job, it was decided to take out the old gear box, mount a new speed changer on the bracket above the machine, put in a V-belt drive between the motor and the gear box and another one between the gear box and the lathe spindle. With the rope drive, 2 less hp. is used to drive the lathe but more speed and better performance is derived from the machine. All this results in 50% more production than was ever obtained from the machine before.

COST SAVING ITEM—163

Save 50% On Plant Painting Maintenance

A new system of anti-corrosion coating using specially formulated neoprene coating has saved up to 50% per square foot in the maintenance painting and coating costs in Pennsylvania Salt Manufacturing's plants. The coating is a true plastic, involving polymerization, in which the accelerator is included in the product, thus eliminating the necessity of mixing on the job. The polymerization takes place after the coating is applied. The coating was developed to be effective under the widest variety and severest coating conditions, involving various strengths of many corrosive chemicals.

COST SAVING ITEM—164



Production Increased; Fuel Consumption Reduced

A large midwest sand and gravel company was having difficulties with bearings that carried the thrust load of the pump. The thrust collars lasted only from 10 days to two weeks, and the bearings became so hot that full horsepower from the motor could not be used. Following the installation of special duty bearings, the pump now takes the full horsepower of the motor and 30% to 40% more sand is pumped each day. Reduction in friction alone has saved one gallon of fuel per hour.

COST SAVING ITEM—165

Maintenance



Washing Machine Slashes Labor Costs \$6,000

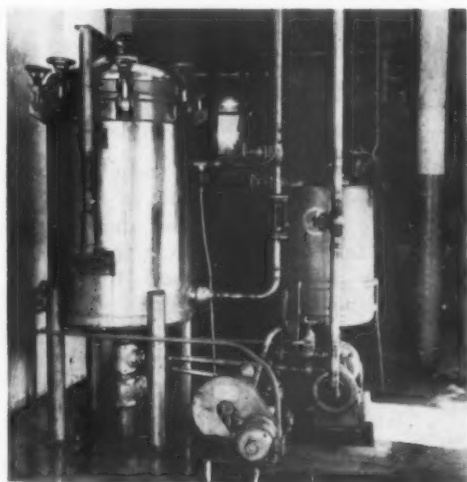
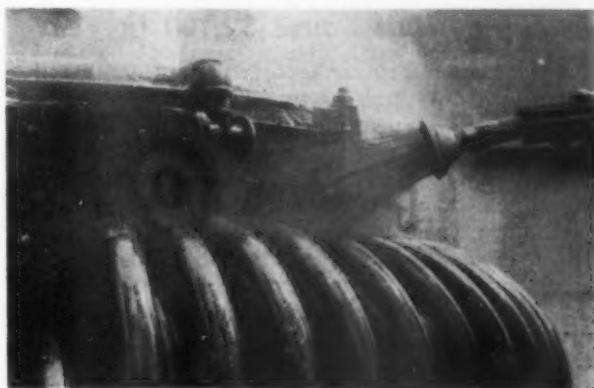
An industrial washing machine, installed by Sinclair & Vallantine, printing ink manufacturers, facilitates the speedy re-use of printing ink tubs for any sequence of colors. It is used to wash, rinse, and dry printing ink tubs. Since it saves 33-1/3% in labor (4 men instead of 6 previously used) and saves 75% in time (previously it took 45 minutes to wash six tubs against 11 minutes with the new machine), the saving in salaries has been \$6,000 a year.

COST SAVING ITEM—166

Transformer Reconditioning Took 72 Hours — Now Done in 4

Reconditioning large transformers in a Georgia plant used to involve removing the copper coils and hand brushing them with mineral spirits. It required 72 man-hours. While the coils were being cleaned, the old paint was being stripped from the interior of the transformer. Then the company turned to a hot flow-on method, which consists simply of spraying a powerful alkaline solution, acting as a detergent, over the interior of the transformer, with the coils in place. This completely removes all burned-on grease and old paint and leaves the transformer ready for repair in just 4 hours.

COST SAVING ITEM—167



Special Fittings Reduce Installation Costs

Larchmont Farms, fruit juice producers of Masonville, N. J., reduced installation costs and improved processing by using new type corrosion-resistant fittings in combination with light schedule stainless steel pipe. With Schedule 5 stainless steel pipe, the fittings reduced flow just 3%. With standard pipe the flow was reduced about 25% around corners and past joints. Use of light wall pipe increased capacity by more than 15%. Accessories can be hooked into the system at lower installation costs, and necessity for dismantling pipe for cleaning is eliminated.

COST SAVING ITEM—168



Rust-Preventing-Oil Helps Increase Parts Output

The anti-rust material used in a Pennsylvania spring manufacturing plant was doing a satisfactory job preventing rust. But it was also gumming up the machines and causing parts to stick together. Then the management switched to a special protective oil of very low viscosity, which coats metal with a fine non-tacky, rust-preventing film. Production increased by 100 parts an hour.

COST SAVING ITEM—169

Sweeping Unit Saves \$2,100 In Year

A food manufacturer reports that an improved porter schedule and the introduction of a hand-propelled sweeping unit will save an estimated \$2,100 per year in cleaning costs. Investment of approximately \$150 is regained in less than a month. Clean-up time of 8 hours, when aided by mechanical sweeper, contrasts with 16 hours by old method. In areas swept by multistroke push-broom method, the sweeper, with collecting hopper, yields greater savings—some as high as 76%.

COST SAVING ITEM—170



Grommet V-Belts Outlast Others More Than 8 To 1

A company installed these grommet V-belts over 4 years ago and they are still in use. Previously the same machine caused the V-belts formerly used to fail after only six months' service because they could not stand the heavy pulling load and the high speed shock each time the machine was started.

COST SAVING ITEM—171

Specify



for

**High Strength
with Excellent
Cold-Forming
Properties**



DECK HINGE

N-A-X HIGH-TENSILE, having 50% greater strength than mild carbon steel, permits the use of thinner sections—resulting in lighter weight of products. It is a low-alloy steel—possessing much greater resistance to corrosion than mild carbon steel, with either painted or unpainted surfaces. Combined with this characteristic, it has high fatigue and toughness values at normal and sub-zero temperatures and the abrasion resistance of a medium high carbon steel—resulting in longer life of products.

N-A-X HIGH-TENSILE, with its higher physical properties, can be readily formed into the most difficult stamped shapes, and its response to welding, by any method, is excellent. Due to its inherently fine grain and higher hardness, it can be ground and polished to a high degree of lustre at lower cost than can mild carbon steel.

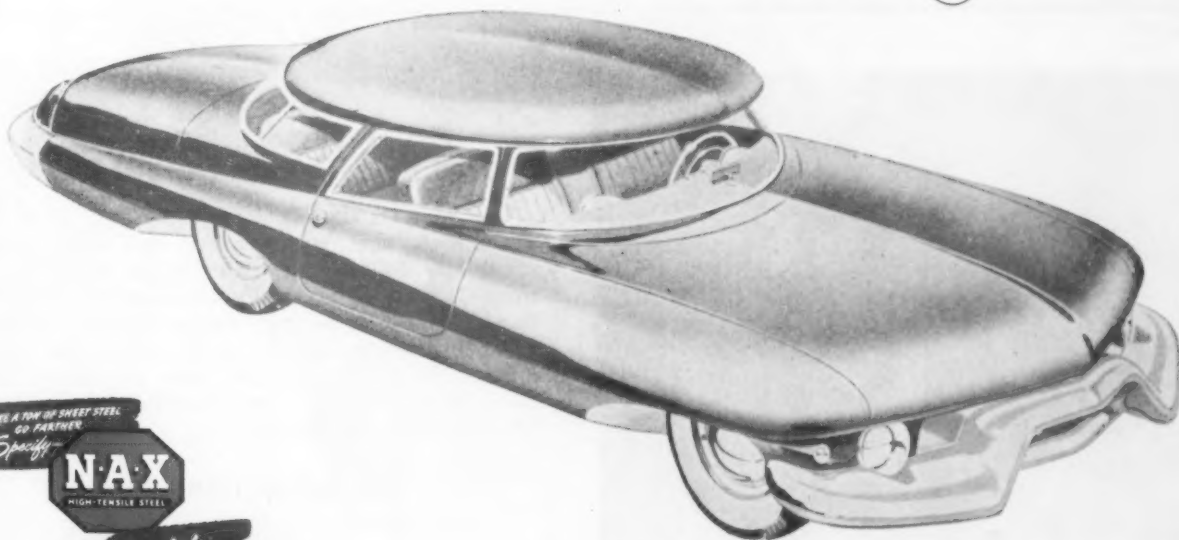
Your product can be made lighter in weight . . . to last longer . . . and in some cases be manufactured more economically, when made of N-A-X HIGH-TENSILE steel.

GREAT LAKES STEEL CORPORATION

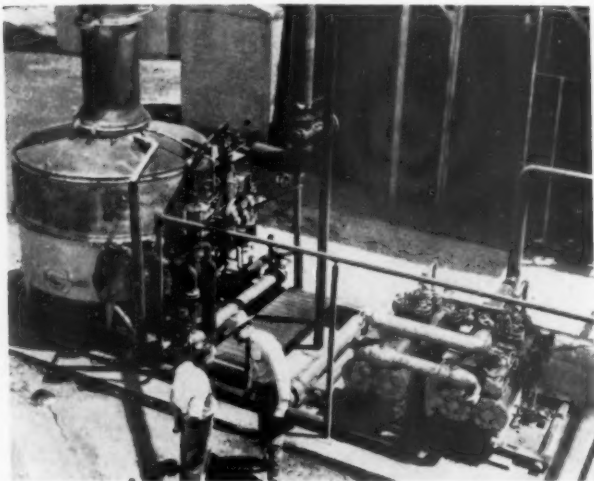
N-A-X Alloy Division

Ecorse, Detroit 29, Mich.

NATIONAL STEEL CORPORATION



KEEP YOUR SCRAP MOVING TO YOUR DEALER



Prevents Losses During Boiler Overhaul

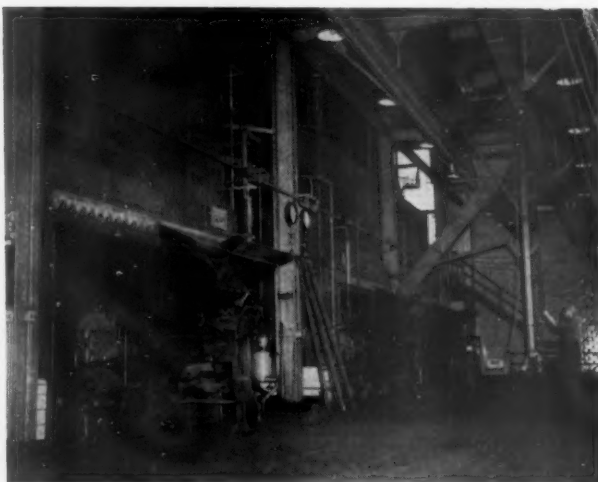
The plant of General Tire and Rubber Co., at Baytown, Texas, had a problem of getting enough processing steam while one of three boilers had to come off the line for overhaul. The company rented a packaged gas-fired steam generator that would produce over 20,000 lb of steam a day. It produces 22,000 lb/hr steam at 165 psi. It is about one-fifth the size of regular boilers that produce only a little more steam per hour. Being automatic, it dispenses with the three firemen that would be otherwise required.

COST SAVING ITEM—172

Die Life Increased 40 Times

Dies which before hardening had begun to mushroom after ten impressions are now giving a large eastern railroad 400 satisfactory impressions. They are hardened with a compound that is safe, quick, and easy to use. It requires no special equipment. The part need only be heated, rolled in the powder, reheated and quenched. The compound is also suited for use in pack hardening.

COST SAVING ITEM—173



Boiler System, Bituminous Coal Boost Steam Output 74.2%

Use of a modern boiler installation fired by bituminous coal has resulted in 74.2% more steam per dollar for the Perfection Stove Company, Cleveland, Ohio. Perfection's old installation, if operating today, would generate 1,362 lbs. of steam per hour per dollar. The new plant produces 2,373 lbs. of steam per hour per dollar. The up-to-date cca- and ash-handling system cut labor costs to a minimum.

COST SAVING ITEM—174

Weedone Sells as it Ships with **RHEEMCOTE**

55-GALLON POSTER DRUMS

More than a fine container...

Rheemcote is a selling container!

The American Chemical Paint Company gains widespread recognition for its weed-killing product with bulk shipments in Rheemcote 30-gallon and 55-gallon Poster Drums.

In Rheemcote containers, your product... your trademark serves constantly as a prestige-building, sales-building reminder to new and prospective purchasers.

Rheemcote containers can be lithographed in any design, including halftones, and in any number of colors. The high gloss finish is tough, long-lasting. Interiors can be roller-coated with special protective lacquers if required. Write for free colorful booklet on this powerful new advertising medium.

Rheem Manufacturing Company,
4361 Firestone Blvd., South Gate, California.



SELL AS YOU SHIP WITH

Rheemcote drums

RHEEM MANUFACTURING COMPANY • Manufacturing Plants in 22 Cities Around the World

CALIFORNIA: DOWNEY, NEWARK, RICHMOND, SAN PABLO, SOUTH GATE • ILLINOIS: CHICAGO • LOUISIANA: NEW ORLEANS • MARYLAND: SPARROWS POINT • NEW JERSEY: BURLINGTON, LINDEN • TEXAS: HOUSTON • FOREIGN PLANTS — ARGENTINA: BUENOS AIRES • AUSTRALIA: BRISBANE, FREMANTLE, MELBOURNE, SYDNEY • BRAZIL: RIO DE JANEIRO • CANADA: HAMILTON • ITALY: MILAN • PERU: LIMA • SINGAPORE • UNITED KINGDOM: BRISTOL.

© 1953 RHEEM MFG. CO.



Plant Fuel Bill Cut 90%

A device containing a special catalyst helped Enamelstrip Corp., Allentown, Pa., to solve a serious air pollution problem as well as cut plant fuel bills by 90%. Installed in an exhaust stack above the company's main coating line, the device oxidizes noxious solvent fumes rising from a paint baking oven. Since the catalyst generates large quantities of heat in the process, it literally has made the plant run on its own smells.

COST SAVING ITEM—175

Threadless Pipe Fitting Saves 37% On Installation Costs

Use of a new threadless pipe fitting saved 37% on pipe installation costs for the News Syndicate Company, Inc., New York City. Acid condensate draining through existing galvanized lines was eating its way through the pipe wall. Normal repairs would have been difficult since it was practically all overhead work and ran through three floors. Shut-down would have been costly. The new fitting made it possible to do the job in 18 hours and eliminated the headaches that go with threading, flaring or welding stainless steel.

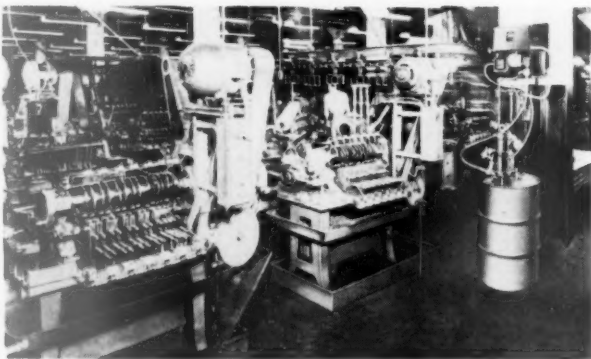
COST SAVING ITEM—176



Use Of Lubricants Slashed 50%

A large motor manufacturer in Flint, Mich., installed automatic centralized lubrication systems on 18 cam milling machines, 15 crankshaft pin lathes and 11 crankshaft cheekers. Each of these three banks of machines are lubricated from one central time clock controlled pump. As a result, production has been increased materially by eliminating bearing-failure down-time, also down-time for lubrication. In addition, the centralized systems have brought about a 50% reduction in lubricants used, slashed rejects by 80%, and reduced machine noise considerably, thereby increasing operator efficiency.

COST SAVING ITEM—177



CONTINENTAL'S PROOF BOOK



HERMAN MUESHAM

38 years old, Wesleyan University graduate; wife, two sons. Formerly with Westinghouse Electric Corp., became General Supervisor of Material Procurement at Piasecki early in 1952.

PIASECKI HELICOPTER CORPORATION
MORTON, PENNSYLVANIA
TEL: SWARTHMORE 6-4000

April 8, 1953

Continental Screw Company
New Bedford, Massachusetts

Gentlemen:

Remember the old proverb, "For want of a nail"! Nobody is more conscious of that than PHC. For not only do we rely on our own 4,500 workers, but more than 3,000 vendors all over the country help us put our helicopters together. Everyone must do his share.

Screws and fasteners are one of the most important items in building aircraft. We must rely upon our suppliers to consistently meet our increasing schedules. Knowing that we can count on Continental for delivery when promised, helps our buyer sleep a lot easier.

Joe Deasey, our buyer, and I want to say thanks for the close cooperation you have always given us. That thanks comes too from the whole Piasecki Helicopter Corporation.

Very truly yours,

PIASECKI HELICOPTER CORPORATION

Herman Muesham
Herman Muesham
General Supervisor
Material Procurement

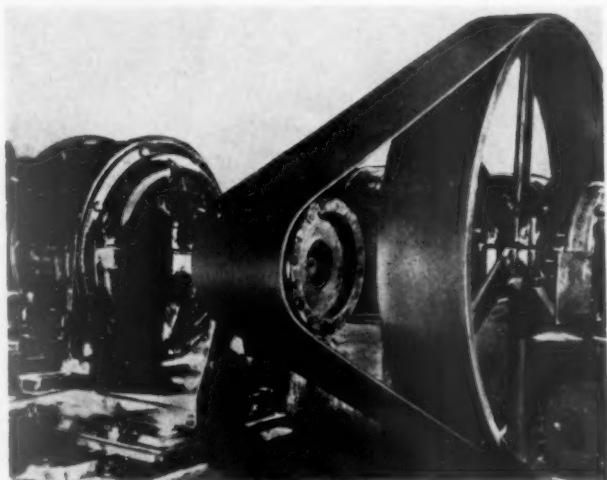
You too can count on Continental.



Manufacturers of **HOLTITE** Fastenings For Every Purpose

CONTINENTAL SCREW COMPANY, NEW BEDFORD, MASS., U.S.A.





Belting Holds Up Twice As Long

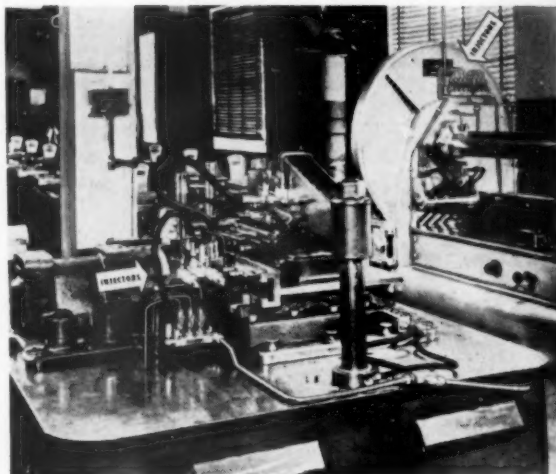
Running night and day an 18-in., 6-ply endless belt has been in service for more than ten years as the main transmission belt on a 150 hp steam engine in a Southern box mill. Delivering peak power, production, and performance, with virtually no maintenance at all, it still shows no noticeable signs of wear. This belting holds up twice as long on the company's main drive as any other belting.

COST SAVING ITEM—178

Production Increased, Lubricant Use Cut 50%

Cudahy Brothers of Cudahy, Wis., found that the trial installation of a new lubricant application system on one press and slicer was so successful that it is now used on three additional presses, slicers and conveyors. Formerly, machines had to be shutdown for one hour every day for lubrication. Now, using the new system, downtime for lubrication has been increased proportionately. Lubricant consumption has been reduced 50%.

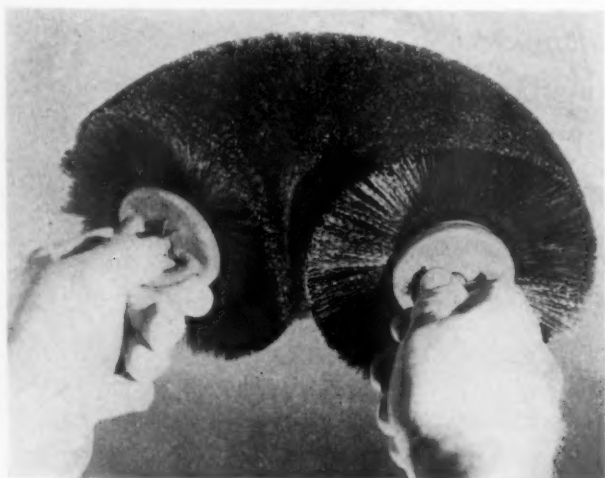
COST SAVING ITEM—179



Cleaning Done In Minutes— Not Hours

A special brush which goes around corners removes weevils, spiders, cobwebs and dirt in the feed spouts of a grain and flour mill in a matter of minutes. Previously the job required hours of tedious labor. The refillable assembly brush passes through bends of more than 90 deg. It can be weighted and lowered through the spout by one man or centered on a long card and drawn back and forth by two men.

COST SAVING ITEM—180



"Get cleaner threads, tighter joints with Buckeye Conduit!"



AN ELECTRICIAN TALKS ABOUT CONDUIT: "I agree with other electricians that "Buckeye" gives a clean and strong thread. A clean thread is essential for making a really tight, safe joint! Youngstown rigid steel conduit is tops."



ELECTRICAL ENGINEER ENDORSES BUCKEYE CONDUIT: "As an electrical engineer, I have jobs which demand wiring which must withstand vibrations and shock. By specifying "Buckeye" I protect these wires because only good steel produces threads strong enough to make tight and safe joints."



Youngstown makes rigid electrical conduit from start to finish. This enables Youngstown to control the complete manufacturing process which insures that each length of "Buckeye" is made of topgrade steel. Since only high quality steel produces a clean, strong thread, it's no wonder that "Buckeye" is a favorite in the industry. On your next job, be sure to specify Youngstown Buckeye conduit.

Shipments of Buckeye rigid steel conduit are now being made from our conduit mills at Indiana Harbor and Youngstown.



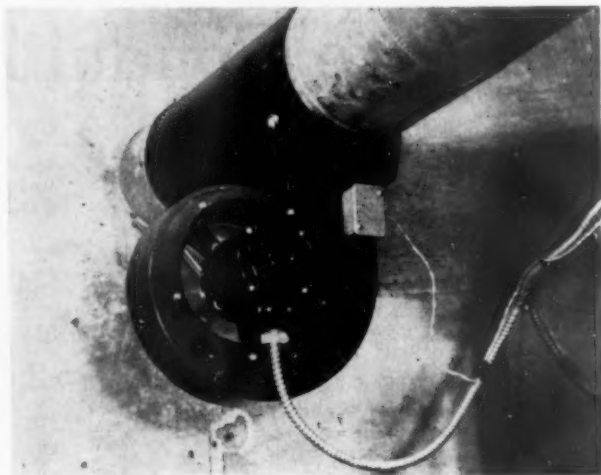
THE YOUNGSTOWN SHEET AND TUBE COMPANY

Manufacturers of Carbon, Alloy and Yaloy Steel

General Offices — Youngstown 1, Ohio

Export Office - 500 Fifth Avenue, New York

COLD FINISHED CARBON AND ALLOY BARS · ELECTROLYTIC TIN PLATE · COKE TIN PLATE · WIRE · PIPE AND TUBULAR PRODUCTS · CONDUIT · RODS · SHEETS · PLATES · BARS · RAILROAD TRACK SPIKES.



New Heating System Saves Large Building, Pays for Itself

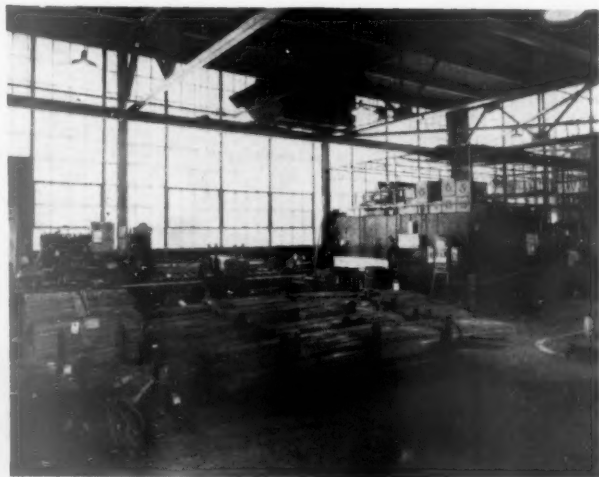
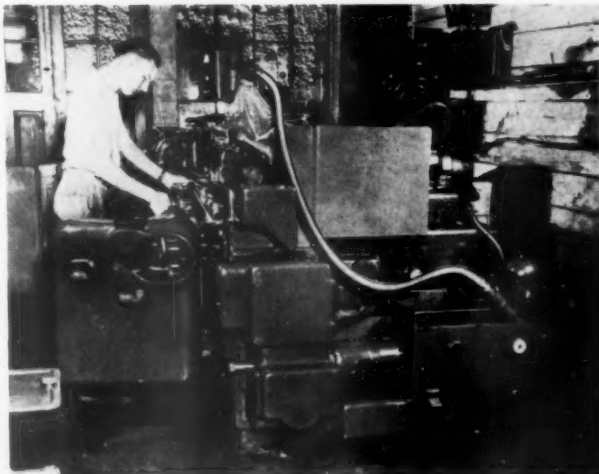
A large plant in Middletown, Ohio, formerly used by a tobacco company, faced razing until five local industries agreed to lease the building. The entire building was then sub-leased to two companies, but the rate would not permit continued use of the old central steam plant for heating. Installation of 29 warm air furnaces vented out the side of the building with the aid of a draft creator (photo), saved the building for useful occupancy. Income from use of the building is used for the benefit of the people of Middletown.

COST SAVING ITEM—181

Coolant Hose Outlasts Others 5 Times

The coolant for the automatic thread grinder at the Kinkade Tool and Machine Works, Portland, Ore., is pumped through a length of hose to the workpiece. The hose formerly used on the machine swelled and became so spongy and mashy that it had to be replaced in less than six months. The hose currently used has an oil resistant tube and cover. Installed on the grinder two and a half years ago, it is still in service. It has already lasted five times as long as any other hose used on the thread grinder.

COST SAVING ITEM—182



Eight New Unit Heaters Save \$12,000 Yearly

Eight new unit heaters, controlled automatically by thermostats, and requiring a minimum of maintenance, are saving \$12,000 a year for Linderme Tube Company, Euclid, Ohio. When the company used its former stoker-fired steam boiler system, state law required employment of one stationary engineer and three licensed firemen at about \$12,000 a year. If the former heating system had been extended to a new 2,400 square foot plant addition, an estimated \$5,000 in new pipe work plus a new \$5,000 boiler would have been required. This is unnecessary with the new unit heaters.

COST SAVING ITEM—183

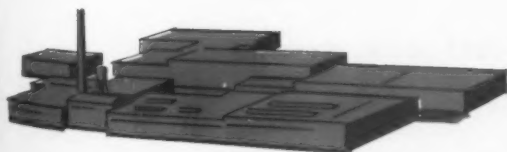


but **one**



Fort Howard Paper Towel

**with stabilized absorbency
does a better job!**



There's a big difference in paper towels — and Fort Howard Towels offer **STABILIZED ABSORBENCY**, which means effective drying regardless of the age of the towel. And there are other advantages, too . . . **CONTROLLED WET STRENGTH**, to make Fort Howard Towels strong and firm without sacrificing softness or absorbency. And Fort Howard Towels are **ACID FREE**.

Fort Howard Towels are available in seventeen grades and folds . . . with a towel to fit any folded towel cabinet. And Fort Howard Towels are always available, with consistent high quality at the right price. For full information and samples, write Fort Howard Paper Company, Green Bay, Wisconsin or call you Fort Howard distributor salesman today!

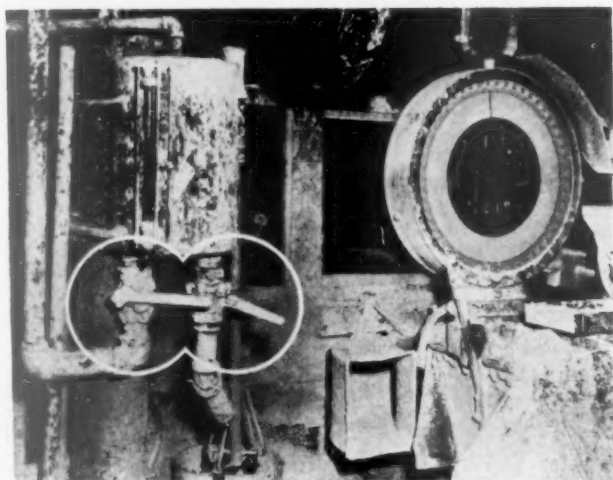
Fort Howard
Towels Fit
Any Folded
Towel
Cabinet

For 33 Years Manufacturers of
Quality Towels, Toilet Tissue and Paper Napkins

FORT HOWARD PAPER COMPANY, GREEN BAY, WIS.



Maintenance



Valves Operated 350,000 Times Without Maintenance

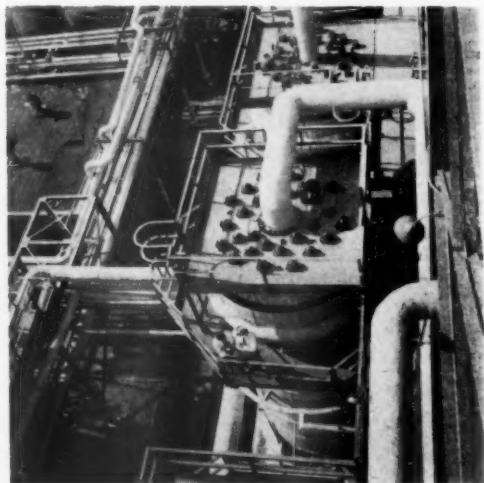
Libbey-Owens-Ford Glass Co., has obtained outstanding results with ball valves that stay in service for over a year against a previous best service from other valves of only six to eight weeks. Two 1½" valves of this type, used on river water to mix plaster for the grinding and polishing line, were operated 24 hours a day, 5 to 6 days a week and approximately 1,500 times a day depending on line speed with no maintenance for over a year. The valves are leak proof after continued use and are easy to open or close under full pressure.

COST SAVING ITEM—184

Waste-Burning Catalyst Returns Over \$80,000 Yearly

A partial installation of a waste-burning catalyst in Sun Oil Company's Marcus Hook, Pa., refinery, is saving the company \$27,500 a year, and will return more than \$80,000 yearly when the installation is complete. Extensive further application of the catalyst at Marcus Hook and at Sun's refinery at Toledo, Ohio, is expected to raise the company's savings to \$500,000 annually. Waste carbon monoxide and hydrocarbons, blown out of petroleum-cracking reactors in a continuous stream are burned as they pass through the catalyst. 80% of the heat is converted to steam, the remainder, through a gas turbine, to electric power.

COST SAVING ITEM—185



Salvages 1,000 Lbs. of Wool Weekly

A Pennsylvania wool processor employs a unique method to recover raw wool ordinarily lost down the sewer. The main sewer from the scouring and carbonizing machines empties into a shed-covered pit. The recovery brush revolves against a perforated screen to pick up stray wool. Formerly 80% of this wool was lost. Now, 1,000 lbs. of raw wool per week are salvaged.

COST SAVING ITEM—186

MEET MR. LYON, D.D.S.*

* Dealer of Diversified Services

LYON's national organization of steel equipment dealers serves virtually every segment of business and industry—with a diversified line of products totalling more than 1500 different standard items. (A very few are shown below.)

Factories, shops, warehouses, offices, churches, clubs, hospitals, homes—these are just a few of the many markets Lyon dealers serve with quality steel products.

Engineering and production facilities are also available for special contract work.

FACTORIES IN . . . AURORA, ILL., AND YORK, PA.

LYON METAL PRODUCTS, INCORPORATED

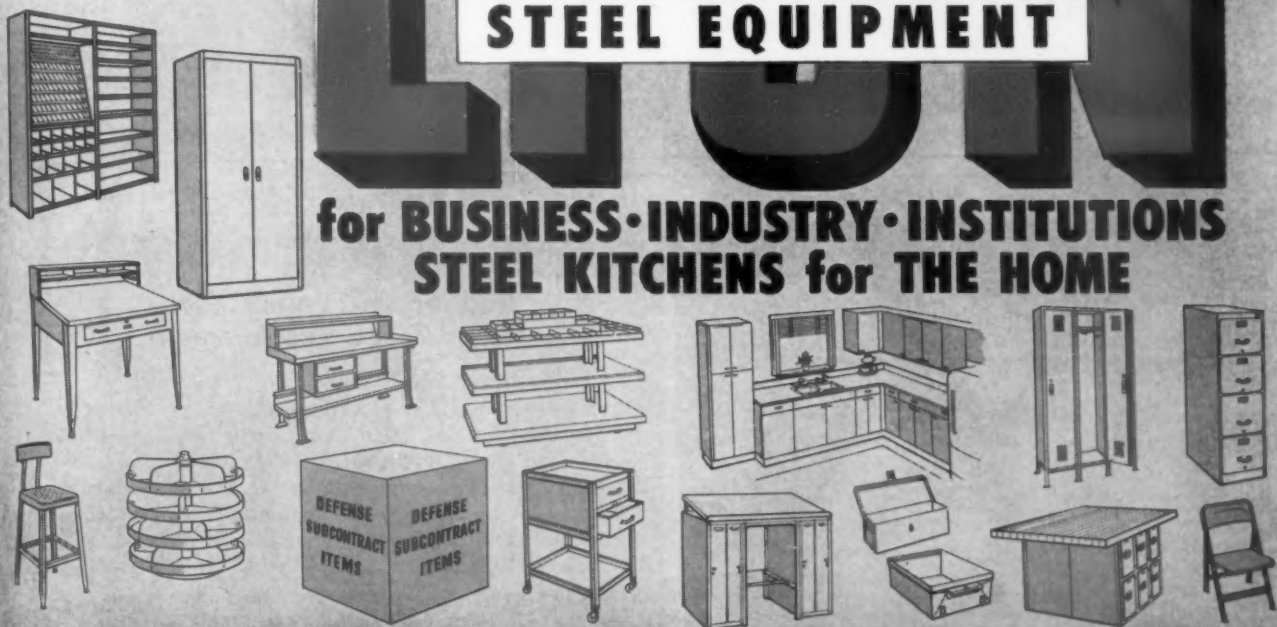
General Offices: 533 Monroe Avenue, Aurora, Illinois

Sold Nationally Through Dealers and Branch Offices

LYON

STEEL EQUIPMENT

for BUSINESS • INDUSTRY • INSTITUTIONS
STEEL KITCHENS for THE HOME



A PARTIAL LIST OF LYON STANDARD PRODUCTS

- Shelving
- Lockers
- Stools
- Bin Units
- Kitchen Cabinets
- Cabinet Benches
- Storage Cabinets
- Drawing Tables
- Tool Toters
- Bar Racks
- Tool Boxes
- Parts Cases
- Economy Locker Racks
- New Freedom Kitchens
- Toolroom Equipment
- Wood Working Benches
- Display Equipment
- Flat Drawer Files
- Revolving Bins
- Hanging Cabinets
- Filing Cabinets
- Folding Chairs
- Work Benches
- Bench Drawers
- Service Carts
- Sorting Files
- Drawer Units
- Hopper Bins
- Tool Stands
- Shop Boxes
- Tool Trays
- Shop Desks



Press Mounted In Record Time

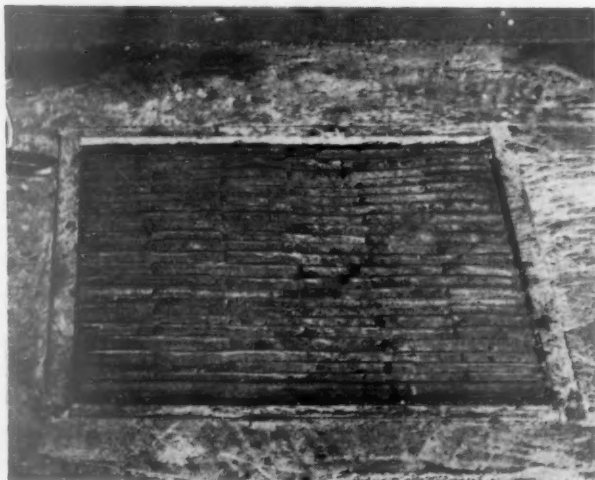
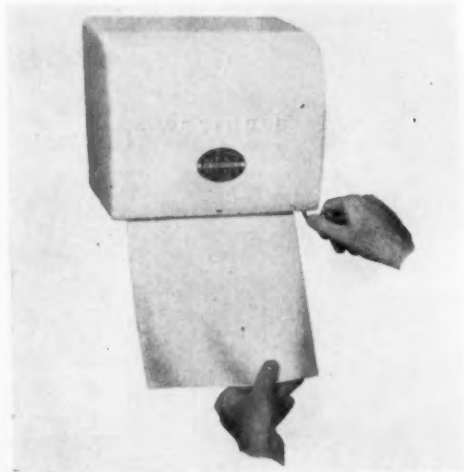
The large press in the plant of a midwestern metal working firm was installed in record time, without the use of screws or bolts. Felt pads cut to size were coated with special adhesive and placed in position. The press was lowered, left overnight for the cement to set, and began operation the next day. Advantages in using this installation method were: (1) savings in time and labor required; (2) elimination of floor drilling and resulting damage to floor; (3) dampening considerably of vibration and noise.

COST SAVING ITEM—187

Savings on Paper Towels Run From 33-1/3% to 50%

A new type of paper towel dispenser permits the user to wind out only the amount of toweling needed—with the average running to 17" as against 22" of other types. Several industrial and institutional installations have shown savings of from 33-1/3% to 50% in the cost of towels.

COST SAVING ITEM—188



Rubber Pad Ends Costly Wood Block Replacement

In removing heavy parts from machines, workers at the Ohio Crankshaft Company had to drop them on the floor first. The wood blocks in this area had to be replaced every 30 days, at considerable cost in labor and material. Installation of a special rubber mat in the area has ended replacements. Mat has been in the spot eight months with no sign of wear.

COST SAVING ITEM—189

Maintenance



Metallizing Cuts One Hour Salvage Job Time To Five Minutes

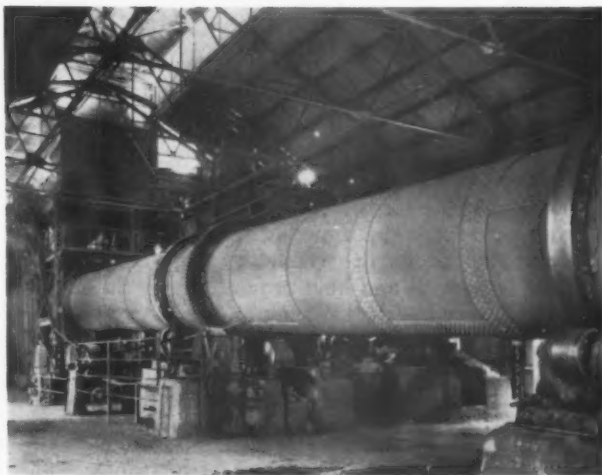
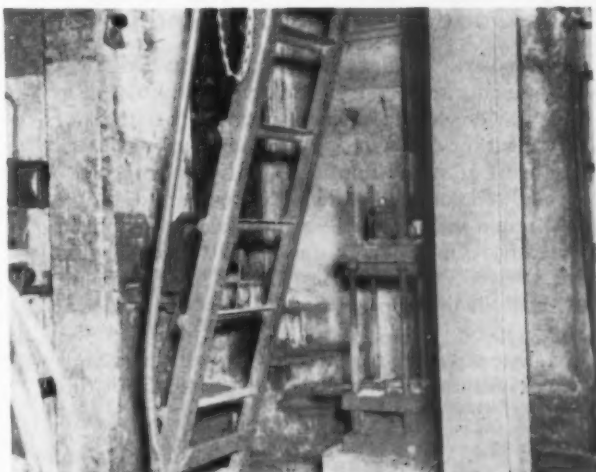
An automotive manufacturer has reduced crankshaft salvage time from one hour per shaft to about five to 10 minutes, through the use of a metallizing process instead of a welding process. In the past crankshafts which had been mis-machined to a smaller dimension than required for assembly had been welded to build them up, risking warping and requiring excessive finishing time. Under the new process, the newly machined parts require only a "shoe-shine" with a strip of emery cloth. A high molybdenum metallizing wire is then sprayed on, which is said to provide a harder surface than the original shaft material.

COST SAVING ITEM—190

No Corrosion After 14 Months With Vinyl Coating

Kuehne Chemical Co., Elizabeth, N. J., manufactures sodium hypochlorite which is extremely destructive to all steel surfaces. Various coating systems previously tried in an effort to control corrosion invariably would fail in a matter of weeks. Mere vibrations in the plant would be sufficient to release large scales and sheets of rust. After application of a vinyl coating system the plant steel girders and a steel ladder show no signs of corrosion after 14 months.

COST SAVING ITEM—191

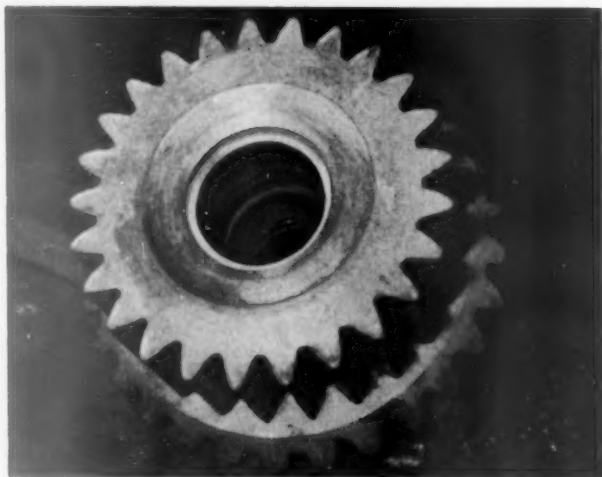


Lubricant Cost Cut From \$2,134.00 To \$35.84

In a seven month period, The Brown Company of Berlin, N. H., cut the cost of lubrication of the bearings of their kraft mill lime kiln from \$2,134.00 to \$35.84. The higher cost was incurred when conventional oil of the density recommended was used. This oil required daily application. When a change was made to the new lubricant, only 128 lbs. were used for initial filling and replacement at a cost of \$35.84. Instead of daily applications only weekly ones were required.

COST SAVING ITEM—192

Maintenance



5 Minutes, Not 2 Hours, To Cut Bronze Bushing

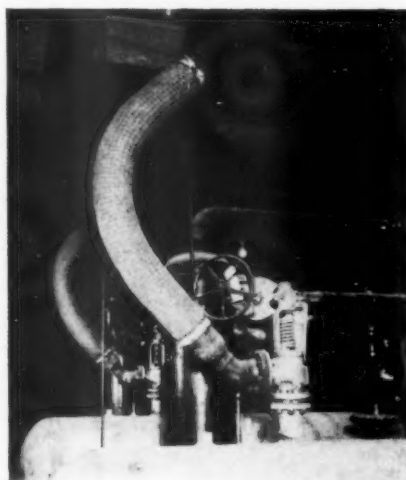
Using an electrode that chamfers, gouges and grooves all metals, one mid-western company has sliced a job that used to take two hours down to five minutes. This time is saved in the repair of double idler pinions from an Insley crane's deck gears. Periodically the bronze bushing inside the pinion wears out and has to be replaced. The old method of removing took two hours or more. The new electrode solved the problem and cuts removal time of the bushing to 5 minutes.

COST SAVING ITEM—193

Public Good Will Bought at Small Cost

Power plant safety valve exhaust piping expands considerably when the valve blows. Because of this, power engineers have been in the habit of not connecting the safety valve with the blowoff piping, thus allowing for the expansion. This practice results in a tremendous generation of noise every time a valve blows—a nuisance to people in the vicinity. One large public utility solved this problem by inserting a large length of flexible metal hose in the gap between each valve and the exhaust piping. This dampened the noise and absorbed the pipeline expansion as well. It was a small cost for the public goodwill gained from the noise reduction.

COST SAVING ITEM—194



Welding Saves Time, Thousands Of Dollars

When the transmission housing broke on a 60-ton U. S. Naval Yard railway crane, operations were suspended. The crane was essential for pier and drydock work. Yet replacement of the crane was impossible for at least six months. It was decided to repair the housing. An electrode with distinctive properties which could be welded "cold" was used and held repair time to the minimum. The repair took 32 hours from start to finish. The cost for time and material was under \$260. These figures compare with a replacement cost of \$3,800 and delivery delay of six months for a new unit.

COST SAVING ITEM—195



The M.S.A. man's full-time job is safety. He knows thoroughly the hazards of the industries he serves. He is a source of practical, how-to-do-it tips because he is constantly at work with dozens of Safety Directors—helping them solve specific problems—seeing to it that the equipment they need gets there "on the double." He is backed by the Nation's largest Research Laboratory devoted exclusively to safety. He can make completely unbiased recommendations, and supply any requirement with an approved and proved piece of equipment because . . .

He has the answers to over 2600 SAFETY PROBLEMSIN THE BAG!

Respirators

Air Line
Chemical Cartridge
Comfo Dust
Dustfoe #55
Gasfoe
Gas-Fume
Metal-Fume
Paint
Pocket-Type
Ultra Filter

Head Protection

Skullgard Hats and Caps
Combination Skullgard-Welding
Shield
Coolband
Firemen's Helmets
Fiber Glass Hats
Shockgard

Eye and Face Protection

Acid Hood
Ear Defenders
Eye Shields
Faceshields
Goggles
Paint and Dust Hoods
Welder's Helmets



Call the M.S.A. man on your every safety
problem ... his job is to help you

Safety Clothing

Asbestos Suits
Belts, Safety
Chemgard Aprons, Sleeves
ChemKlos
Clothing, Protective
Gloves
Knee Pads
Plastic Clothing
Rubber Clothing
Shoes, Safety

Instruments—Dusts

Cascade Impactor
Dust-Vue Microprojector
Electrostatic Sampler
Geiger Counter
Midget Impinger

Artificial Respiration Equipment

H-H Inhalator
Oxygen Therapy
Pneolator
Pneophore

Masks

Abrasive Masks
All-Service Gas Masks
Ammonia Mask
Chlorine Mask
Heat Mask
Hose Mask
Industrial Gas Masks
Tank Gauger's Masks

Instruments—Gas

Aromatic Hydrocarbon
Detector
Benzol Indicator
Carbon Monoxide Alarms,
Indicators, Recorders
Combustible Gas Alarm,
Indicator
Explosimeter
Hydrogen Sulphide
Detector
Infra-Red Liquid and Gas
Analyzer
Methane Detector
Nitrogen Dioxide Detector
Oxygen Deficiency
Indicator
Oxygen Indicator

Oxygen Breathing Apparatus

Chemox, Self-Generating
Demand Mask
McCaa 2-Hour
M.S.A. 1-Hour

Miscellaneous

Bulletin Boards
Signs
Edison Electric Cap and
Hand Lamps
First Aid Supplies
Fogpruf
Salt Tablet Dispensers

MINE SAFETY APPLIANCES CO.

Bradock, Thomas and Meade Streets, Pittsburgh 8, Penna.
At Your Service: 76 Branch Offices in the United States
Mine Safety Appliances Co. of Canada, Limited
Toronto, Montreal, Calgary, Winnipeg, Vancouver,
New Glasgow, N.S. Representatives in Principal Cities in
Mexico, Central and South America
Cable Address: "MINSAP" Pittsburgh

Safety Equipment



Vapor Removing Time Cut From 16 Hours To 1 Hour

A compressed-air type ventilating air mover on the bottom outlet and a simple air deflector supported in the dome of the car, has helped Lone Star Gas Co., cut the time for removing gasoline or liquified petroleum vapors from cars from 16 hours to one hour. The method is safer than using steam because it allows uninterrupted servicing by a crew of men. Using air rather than steam relieves workmen of the discomfort of high working temperatures produced by steam.

COST SAVING ITEM—196

Vision Program Lowers Reject Rate, Cuts Machine Accidents

After instituting a plant wide vision program, Motorola, Inc., Chicago, noted these improvements: a reduction of more than 75% in the number of defective television and radio sets passing through the inspection department; a 10% drop in the turnover rate and the same increase in productivity; and a 33 1/3% decrease in machine accidents.

COST SAVING ITEM—197



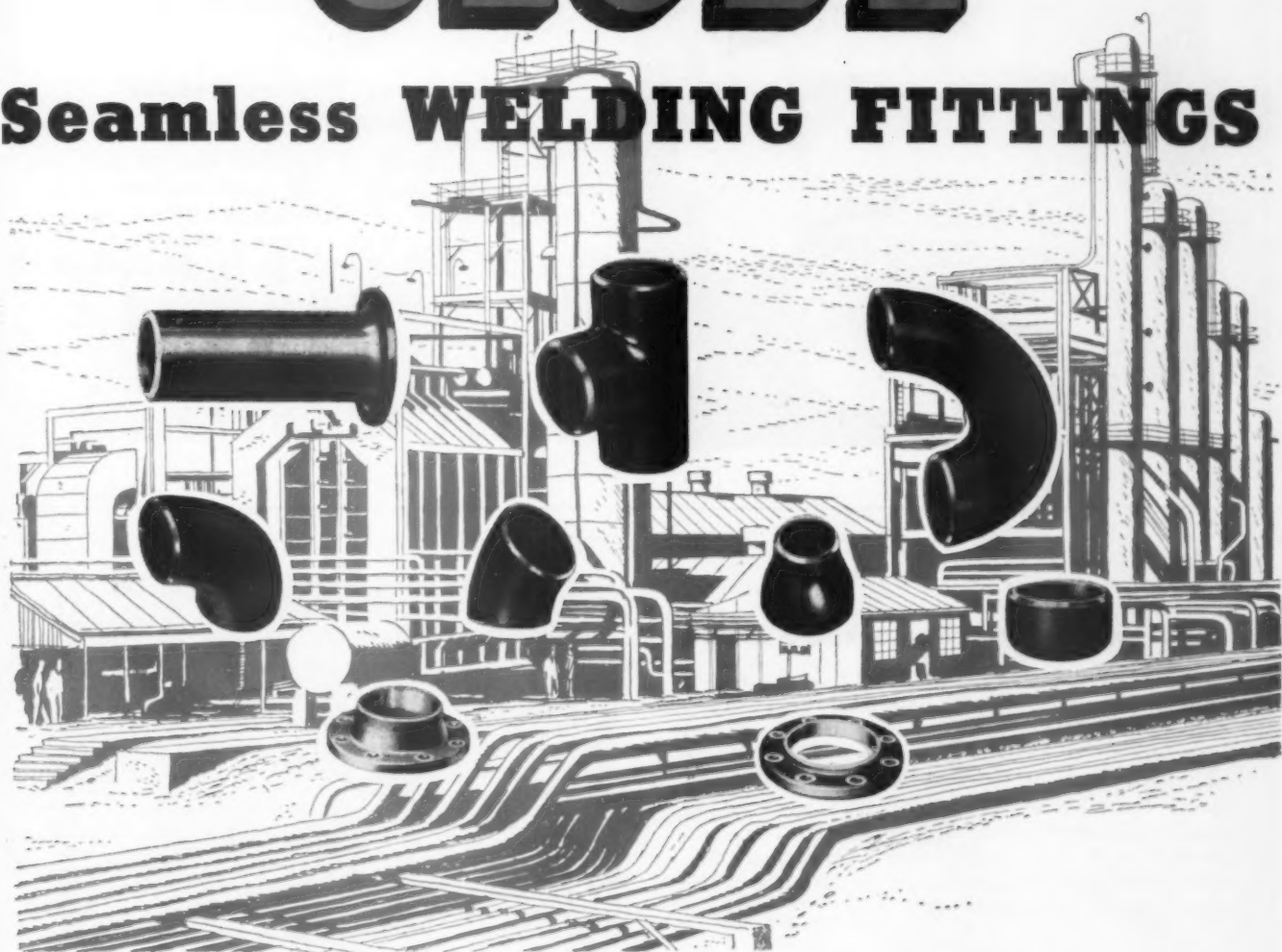
Lotion Stops Skin Irritation Of Workers In Carbon Plant

Workers at the Saint Marys, Pa., plant of Speer Carbon Company are now being supplied with a leg lotion originally made as a substitute for stockings during the nylon shortage a few years ago. This lotion seals the pores of their faces so that airborne particles of carbon and pitch cannot clog them. Previously sun and wind acting upon the carbon in skin pores produced a definite irritation. The lotion is easily removed.

COST SAVING ITEM—198

GLOBE

Seamless WELDING FITTINGS



**The only seamless welding fittings
precision-processed... from billet... to tube... to fitting**



From charging the specially designed revolving furnace with a steel billet (above) through the many succeeding steps of production, every Globe process is specialized to produce fittings of unvarying quality.

Globe precision-process manufacture begins with the billet—continues through the making of the seamless steel tube (Globe alone among welding fittings manufacturers produces seamless steel tubes)—and extends through to the production of the finished fittings.

Because Globe has highly specialized controls—at every stage of manufacture at its own plant—you can be sure of uniform high quality seamless welding fittings when you specify Globe.

Send for the Globe Welding Fittings complete catalog.



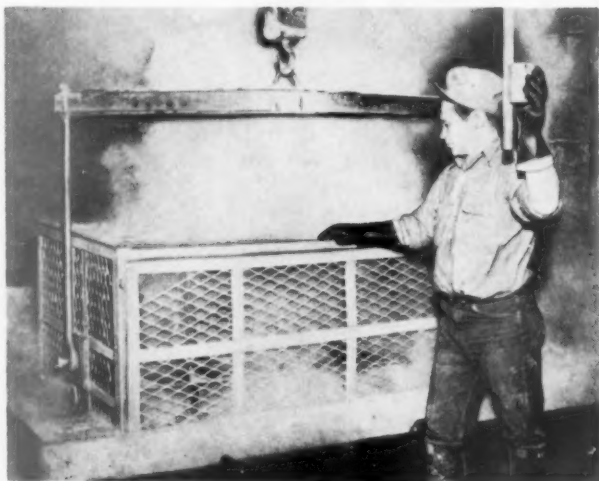
GLOBE STEEL TUBES CO.,
Milwaukee 46, Wisconsin

Chicago • Cleveland • Detroit • New York • Philadelphia • St. Louis • Denver • Houston • San Francisco
Glendale, Cal.

Producers of Globe Welding Fittings — Globe seamless stainless steel tubes — alloy-carbon seamless steel tubes — Gloweld welded stainless steel tubes — Globeiron (high purity ingot iron) seamless tubes.

**AVAILABLE IN A COMPLETE LINE OF SIZES AND WEIGHTS
THROUGH GLOBE DISTRIBUTORS IN ALL KEY CITIES**

Safety Equipment



Neoprene Gloves Reduce Injuries 78%

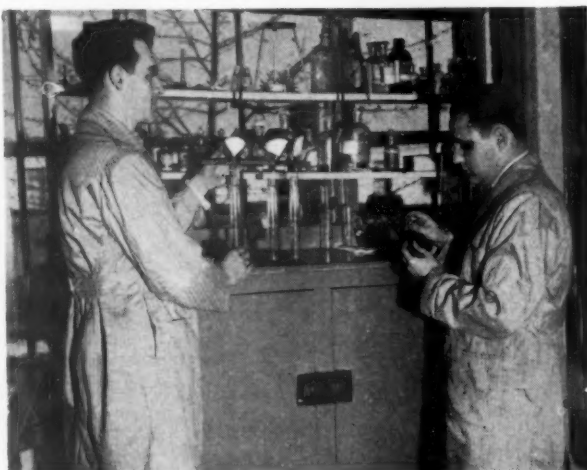
Hand injuries due to contact with acids were reduced 78% in a large metal-working plant through the use of neoprene-coated work gloves. The new gloves, which replaced ordinary fabric-type gloves, outlasted the old type many times over.

COST SAVING ITEM—199

Lab Coats Show Remarkable Wear

Chemists in the Cross Island Laboratories, Franklin Square, N. Y., had used up to eight cotton lab coats a year, as each was destroyed and burned by acids and chemicals. Since adopting coats made of 100% Orlon, the company reports remarkable records for long wear under conditions usually fatal to other fabrics. The coats shown here have been worn continuously for almost two years under rugged conditions without being adversely affected.

COST SAVING ITEM—200



Belt Dressing Prevents Costly Accidents

Because of accident experience with a bar of belt dressing, a large grain company in Philadelphia, Pa., changed to the use of a spray dressing for conditioning V-belts. This method is completely safe as arms and hands can be kept clear of the belting while spray is being applied. The spray can be applied while the belt is in operation without any risk of the operator's hand slipping and so expose the arm to danger of being trapped against the sheave to suffer serious slicing injuries.

COST SAVING ITEM—201



A new and better* way to transmit power
...without slippage...without lubrication!

Gilmer

"TIMING" BELT

Standard STOCK DRIVES

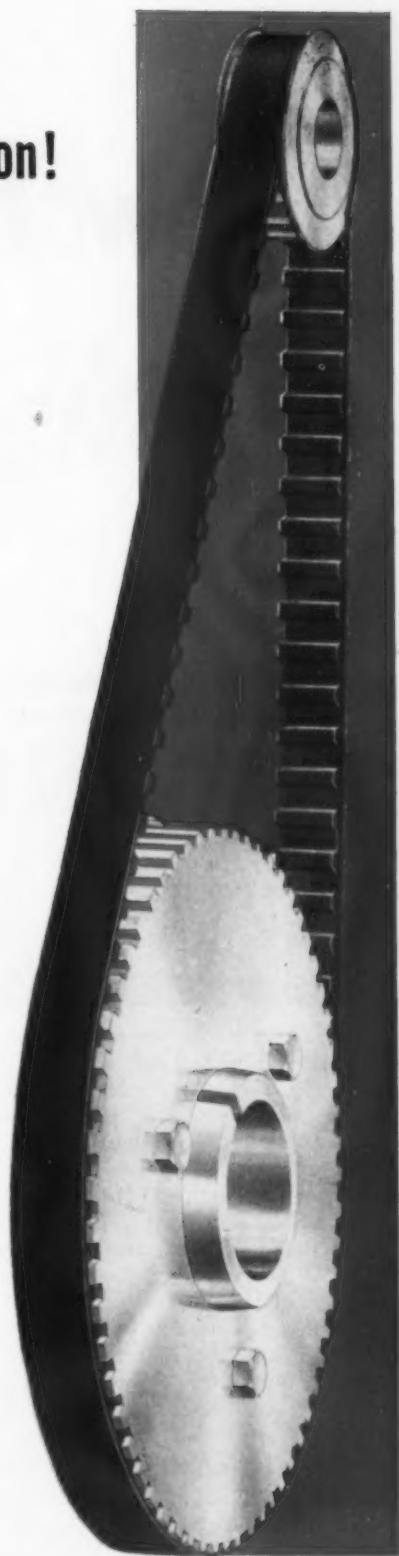
HERE'S a new type of drive that gives you a combination of desirable characteristics afforded by no other method of transmitting power! Now made available for general application by the introduction of Standard Drives obtainable from local NYB&P Distributors' stocks, this revolutionary toothed belt drive has been proved in commercial use for more than seven years.

Hundreds of leading manufacturers of power-driven machinery have made "Timing" Belt drives standard equipment on their products. Over 200,000 such drives are now in operation on mass-produced machines, many having run more than five years without a belt replacement.

Standard Stock Drives now make it practical for plant engineers to apply to individual

drives all these "Timing" Belt advantages:

- * **NO LUBRICATION**—Absence of metal-to-metal contact eliminates need for lubricants, lubricating devices and housings. High speeds cause no lubricating problems.
- * **NO INITIAL TENSION**—Teeth, not friction, provide the grip. Bearing loads are reduced; need for out-board bearings is usually eliminated.
- * **STRONG, LIGHT, FLEXIBLE**—A single layer of continuously-wound, neoprene-encased steel cable of high tensile strength gives the "Timing" Belt highest strength-to-weight ratio, with extreme flexibility. No stretch, no take-up!
- * **CAN'T SLIP**—Positive engagement of the "Timing" Belt's teeth with axially-cut pulley grooves assures no slippage, no power loss; gives precision control of speed ratio.
- * **ULTRA COMPACT**—Very small pulleys can be used, without slippage... permitting very short centers and high ratios.
- * **CAPACITY**—1/100 to 50 hp from stock; to 300 hp on order.



Ask your NYB&P Distributor for the new Gilmer "Timing" Belt Standard Drive Manual, or write direct to "Timing" Belt Division, New York Belting & Packing Co., Tacony, Philadelphia 35, Pa.

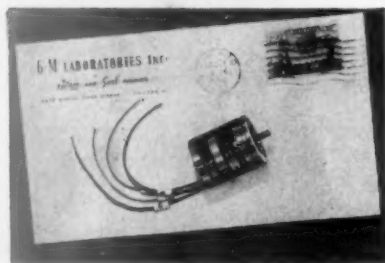
NEW YORK BELTING & PACKING CO. 1 Market St., Passaic, N. J.

America's Oldest Manufacturer of Industrial Rubber Products

New Products Ideas



Miniature Servo Motors Meet Rigid Specifications



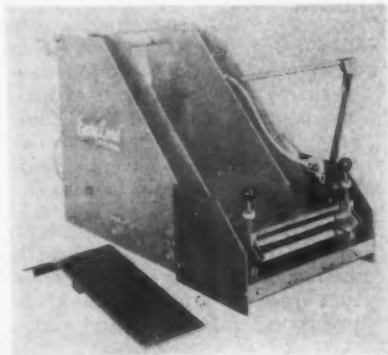
Miniature precision servo motors to meet rigid specifications are made by G-M Laboratories Inc., 4300 N. Knox Ave., Chicago 41, Ill. They are approximately 1" in diam and slightly over 1" in length and are available for frequencies varying from 60 to 400 cycles and in 2, 4, or 8 pole construction. Stall torque ranges from .25 to .35 oz./in. Output shaft can be supplied to suit, with or without integral pinion. The extreme precision required in these motors involves tolerances as small as plus or minus 0.0001. They can be supplied to meet the most rigid specifications as regards humidity, temperature, vibration and altitude.

Taper-Lock Sprockets, Bushings Eliminate Boring of Sprockets

Dodge Manufacturing Co., Mishawaka, Ind., is making available a line of taper-lock sprockets and roller chain. They bring a new "off-the-shelf" availability to roller chain drives by the application to sprockets of the taper-lock principle, already proved in millions of V-belt, coupling, conveyor pulley and silent chain installations. Ta-

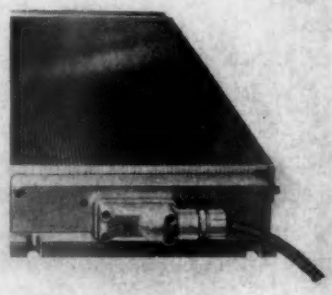
per-lock sprockets and bushings will be available in a range of sizes for the majority of industrial applications so that time-consuming boring of sprockets to fit shafts will be eliminated. A complete range of B-steel sprockets, 40 to 100 pitch is being produced.

Pinch Roll Attachment Handles Troublesome Materials



A positive drive pinch roll attachment for the company's "Easy Load" automatic coil cradles has been made available by Rowe Machinery & Mfg. Co., 1506 N. Industrial Blvd., Dallas, Texas. The attachment is designed for the positive feeding of troublesome materials, including thin, thick, oily, lamination, and spring tempered stocks as well as stock from egg shaped rolls. Material between 0.010" and 0.150" thick can be handled. The attachment when combined with the cradle provides two powered pinch rolls and four powered cradle rolls making possible a positive feed which is not dependent on the weight of the body of coil.

Power-Grip Chuck Features Multiple Poles



A magnetic chuck, featuring multiple holes for full work surface holding area is made by Sundstrand Magnetic Products Co., Rockford, Ill. It has closely spaced separators which are of .050" wide brass separated by a 1/8" wide mild steel spacer. The 100% silver brazed construction results in a very rigid base for precision grinding. Advanced design and high efficiency of the low voltage winding give uniform holding power over the entire face of the chuck. The full work surface holding area will hold large quantities of small, thin parts having small areas of contact with the chuck.

Valve Eliminates "Repeats" On Mechanical Presses

"Repeats" due to valve failure on mechanical presses, controlled by air-operated clutches and brakes, should be a thing of the past, claims Hannifin Corp., 1194 South Kilbourn Ave., Chicago 24, Ill. A special air control valve made by the company is the answer. It is a dual 3-way (Please turn to page 202)

The Greatest Advancement in D.C. Welding!

THE NEW A.O. Smith RECTIFIER

OUTPERFORMS ANY MOTOR GENERATOR SET MADE!

No moving parts to wear out. No brushes and bearings to replace. No commutator to corrode or turn down . . . maintenance expense practically eliminated.

Instant striking and smoother arc! There's no inductive time lag usually found in motor generator sets.

OUTPERFORMS ANY OTHER RECTIFIER MADE!

Eliminates stack failure. High-velocity, down-draft ventilation provides plenty of cooling air within the machine. There's no need for thermostatic protection, no interruptions because of current cut out! Even when short circuited while set at rated output, rectifier-stack temperature rise is held below critical levels!

Eliminates machine noise and current creep. No large magnetic forces develop to cause vibration or tear the machine apart, thanks to its moving-coil design. And positive air separation between primary and secondary coils guards against insulation failure which otherwise might put line voltage on welding leads.

If your jobs call for DC welding . . . you'll weld faster, better, at less cost with this new A. O. Smith D. C. rectifier welder—an entirely new concept in D. C. production welding!

For complete information and name of nearest distributor or A. O. Smith representative, write:

A. O. SMITH CORPORATION

WELDING PRODUCTS DIVISION

Dept. P-553, Milwaukee 1, Wisconsin

International Division: P. O. Box 2023 Milwaukee 1, Wisconsin, U. S. A.



A.O. Smith

WELDING PRODUCTS

Made by Welders . . . for Welders



"AMERICAN BRAND" ROPE IN CARTONS!



- Carton protects rope
- Rope stays clean
- Uncoils from carton
- No inner lashings
- Uncoils properly — no kinking
- Easy to handle and stock

**6 Sizes—10 Put-ups
In Individual Cartons**
1/4", 5/16", 3/8", 1/2" dia. in
600 and 1200 foot coils—5/8"
and 3/4" dia. in 600 foot coils
only.

Handy Coils
100 foot connected
coils. 1/4" 5/16"
3/8" 1/2"
diameter.



American Manufacturing Company—Brooklyn 22, N. Y.

Rope (Manila, Sisal, Jute, Nylon, Polyethylene, Saran, Glass),
Twine, Oakum, Packing, Baler Twine, Carpet and Electrical Yarns

Branch Factories:

St. Louis Cordage Mills, St. Louis 4, Mo.—Delaware River Jute Mills, Phila., Pa.

Sales Offices: BOSTON • CHICAGO • HOUSTON • NEW ORLEANS • SAN FRANCISCO

MAIL COUPON NOW!

Get complete infor-
mation on "American
Brand" Rope in
Cartons.

AMERICAN MANUFACTURING COMPANY
Noble & West Sts., Brooklyn 22, N. Y.

Please send information about

☐ Rope In Cartons ☐ Handy Coils

Name _____

Company _____

Address _____

City _____ Zone _____ State _____

(Continued from page 200)

valve—two 3-way valves in parallel in one compact, common body. Both valves must operate to start the press, but if for any reason only one valve reverses, the unit "fails safe" and the press stops. The new valve is called the P-M series BB-5 and is offered only in 3/4" IPS.

High Speed Air Impact Press



High speed marking, assembling, branding, staking, crimping, riveting and light stamping will be facilitated by an air impact press being put on the market by Cadillac Stamp Co., 17315 Ryan Road, Detroit 12, Mich. Its speed offers up to 10,000 strokes per hour. Pressure is obtainable up to 8 tons from 100# airline and it is adjustable from light to heavy marking. It can also be regulated to give proper ram action required for branding or color leaf marking. It can be actuated by hand, foot or electrical controls. For average work, no special jigs or fixtures are required, and automatic controls make possible high production.

Automatic Couplers For Materials Handling Units

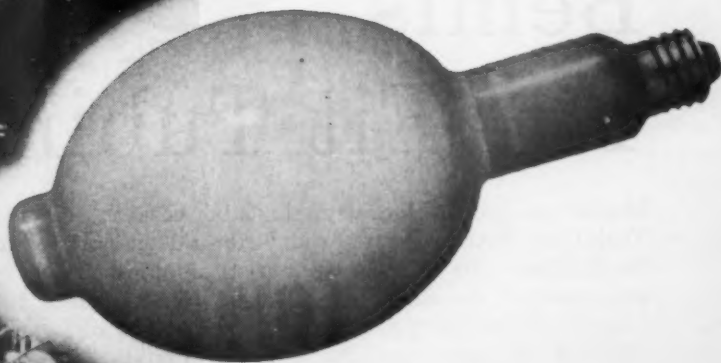
Automatic couplers speed the pick-up and release of trailers used with lift trucks and tractors and are usually preferable to the standard towing eyes. Towmotor Corp., 1226 East 152nd St., Cleveland 10, Ohio, has added three types of automatic couplers to optional original equipment available on their lift trucks and tractors. Installed as replacements for standard towing eyes, they speed the pick up and release of trailers used with Towmotor units.

(Please turn to page 206)

32 Westinghouse Mercury Type Lamps replace 44 Incandescents —Give 7 Times More Light



BEFORE changing to the Mercury type lamps, John A. Roebling's Sons Corp. used 44 incandescent lamps to light their annealing plant.



AFTER changing to Westinghouse Fluorescent Mercury Lamps—the new design that gives white light—John A. Roebling's Sons needed only 32 lamps to light the same area. These 32 lamps gave 7 times as much light as the Incandescents.

When lighting factories, terminal buildings, parking lots, railroad yards and highways . . . Westinghouse Mercury type lamps are more efficient and economical. They produce more light per watt than Incandescents, and have a rated average life of 5000 to 6000 hours. As a result, you reduce total lighting costs. Since you use fewer, longer-lasting Mercury lamps your maintenance costs are cut to the bone.

WHERE YOU WANT WHITE LIGHT, you can use Westinghouse Fluorescent Mercury lamps. They produce white light with regular Mercury lamp economy and eliminate color-correcting Incandescents. *The newest size Westinghouse 1000-watt Fluorescent Mercury lamp is the cheapest source of mass white light in the world.*

The facts are in a 24-page booklet that is yours, free for the asking.
Write to: Westinghouse Lamp Division, Dept. PNG-5, Bloomfield, New Jersey

YOU CAN BE SURE...IF IT'S Westinghouse

**Labor cut
from 2 hours
to
10 minutes**

with

Bemis Tite-Fit Tubing!

Maybe you can cut your wrapping labor costs the way this New York City textile company did. After a demonstration of Tite-Fit Tubing—the spiral-sewn burlap shipping tubing with 2-way stretch—the manager said, “Last evening it took two men over two hours, using flat yardage, to hand-sew and steel-strap two units that you have covered in ten minutes.”

Now, of course, Tite-Fit Tubing has taken over the job in that plant . . . and labor costs have tumbled. Ask the Bemis Man to demonstrate to you.

Whatever your needs, we can furnish mixed carloads of burlap piece goods in a wide assortment of widths and weights.

*Here's more
good news*



Prices are down! What's more, you can build long-term plans on Bemis Burlap, because everything points to a long continuation of favorable prices and supply.

BURLAP PRICES



Bemis



General Offices
St. Louis 2, Mo.



(Continued from page 204)

Each type is built with an open jaw which automatically makes the connection when entered by the trailer



coupler. Two couplers are spring-actuated, the other has a ball-type lock.

Double Ended Stackbins Serve Two Operators



Serving operators on two assembly lines set up face-to-face is a problem said to be solved by a new line of double-ended Stackbins in Stackracks. Materials or components are instantly available from both positions. Reloading can be done from either end by replacing with a full double ended Stackbin. Used for processing, the bins hold a complete assortment of components to serve two machine operators, saving floor space and reducing refill operations. They are all constructed of heavy gage steel with built-in positive stacking, index card holder on both ends. They are built by Stackbin Corp., 1127 Main St., Pawtucket, R. I.

Office Equipment and Supplies section of **PURCHASING Magazine**

MAY, 1953

Reception area in the offices of the Barber-Greene Company, Aurora, Ill., introduces visitors to the modern, bright decor seen throughout the company's headquarters.



PURCHASING MAGAZINE—A CONOVER-MAST PUBLICATION

205 EAST 42ND STREET, NEW YORK 17, N. Y.



This machine has cut costs of copies by more than 80%.



Typing production is higher on an electric machine.

How Mechanization Cuts Office Costs

IN an article in another section of this issue, the "mechanization program" for cutting costs at the Cleveland Electric Illuminating Company is described. This program also extends to office functions of the company, and is achieving similar results in saving money and contributing to more efficient work. Listed below are a few examples of how mechanization of the office has helped to contribute to more profitable operation of the company:

COPY MACHINE: In many cases the purchasing department required only one or two copies of letters, contracts, specifications, purchase orders and other papers. The cost of making one page of type matter, considering all factors involved, ran to about 50 cents. With the copying machine, a copy of almost any type of printed matter now costs only 7½ cents. It takes less than a minute

to make a copy and, of course, proofreading and the need for making corrections in copy are eliminated. In one month of operation, 322 copies were made for the purchasing department, in addition to copies used by other departments, indicating the savings that can be realized from the machine. The savings are even greater when multiple copies are required.

ELECTRIC TYPEWRITER: With this machine as many as 10 useable copies can be made with one writing, and at times, as many as 17 copies have been made at once. It saves retyping of many jobs, as compared with the output on a standard manual typewriter, provides cleaner, sharper copies, and is especially valuable in making plates for multilith work, as the impressions are sharp and uniform. On standard or straight typing, pro-

duction increases at least 8 to 10%, and there is less operator fatigue.

STAPLING MACHINE: This machine eliminates hand stapling, and makes it possible for an operator to staple sheets or sets of papers much faster. No "fist work" is required, as sheets to be bound together are simply inserted in the machine and stapled automatically. The purchasing department estimates that the electric stapler doubles output, compared with manual stapling, with far less operator fatigue.

ELECTRIC TIME CLOCK: This electrically-operated timing and dating clock has reduced operator fatigue and resulted in uniform positioning of the time stamp on material stamped, both of which have increased production. The operator can set it for the date of the month and hour of the day, or it can be operated continuously,



Automatic stapling is faster, less fatiguing.



Timing and dating clock has increased efficiency.

showing the precise minute a paper is stamped.

MULTILITH MACHINE: Formerly a fanfold machine was used for writing purchase orders. Now, order information is typed on a mat which is run off on the machine, supplying the required number of copies. When a requisition is received, it is copied on a purchase order form mat for the Multilith machine, saving time in the issuance of orders and eliminating the writing of individual receiving records. The purchasing department's standard practice is to run 11 copies of each purchase order, five of which are for receiving reports and sent to the receiving department. As many as 146 purchase orders have been run off in one day. Because all the copying of the requisition on the purchase order form is done by one operator, the work is done much more quickly than the previous method. All copies are legible. If extra copies of a purchase order are wanted, they can be made from the original mat which is kept on file. Multiple copies of the purchase order are necessary for distribution to the respective warehouses and plants, where blanket orders are issued for a material. For such distribution, as many as 600 copies have been made from one mat. The purchase order mat follows the type form of the requisition, so typing is

simplified. Changes and corrections can be made on the mats very easily. A special eradicating fluid is available which makes it easy to remove a letter or word, or even a whole line.

Two multilith machine operators, who alternate in copying requisitions onto the mats, and operating the machine, are able to turn out

25% more orders than previously.

ELECTRIC CALCULATOR: This has proved invaluable in the four basic mathematical procedures of adding, subtracting, multiplying and dividing, and has increased speed and accuracy in various checking operations and compilations and the preparation of statistical data.

An electric dictating machine is of great help in the purchasing department. Here Mr. Strasbourger, special assistant to the purchasing agent, dictates memorandums on aspects of the company mechanization program.



there's a
big
difference
in "paperwork" costs

For instance: Standard's FORMS

are made so that this
Burster-Imprinter can sign,
date, imprint, and detach more
than 200 separate written
documents a minute.

Mechanization can lower your finished record costs . . . WHEN forms continuously feed, align and register accurately on business machines. Kant-Slip® forms, with the pinfeed platen, do.

Standard's **top quality** forms and devices simplify the **writing process**. That makes a big difference in paperwork costs.

So does Standard's service. Skilled **form design** takes more "work" out of paperwork, makes forms most efficient as instruments of operating your business. Searching **System Analysis** is the basis of all the improvements our Representative proposes. **Mechanical service**, too, is always available.

Phone our office in your city. Or write The Standard Register Company, 103 Campbell St., Dayton 1, Ohio.



Office Equipment and Supplies



"OFFICE modernization" often creates a picture of the installation of huge electronic computers, elaborate calculating equipment, or at best batteries of all kinds of electrical machines. Such moves, of course, would be wasteful and inefficient for many offices with no need for the full potential of such equipment. But office modernization (and therefore savings) involves many different things, all applicable to almost all offices—use of an electric typewriter, adoption of different type forms or carbon papers, a change in filing—and so on through every office operation right down to the stapler. How a variety of equipment and supplies has saved many dollars for users, is detailed in the following pages.

Office Equipment



Filing System Saves \$1,500 Yearly

Through the use of a new filing system, Owens-Corning Fiberglas Corporation, Toledo, Ohio, is able to save a minimum of \$1,500 per year, mostly through reduced overtime work. The company reports much greater speed in filing records and supplying information, especially over long distance telephone. Records are kept up-to-date without working overtime. Interested personnel from other departments have easier access to the records and the papers themselves are kept in better condition.

COST SAVING ITEM—202

Productivity 65% Higher With Electric Typing

Johns-Manville Corporation's accounting department experienced a 65% increase in typing productivity after electric typewriters had replaced other types of machines. Some of the typewriters are equipped with carbon ribbon attachments to produce master copies for reproduction purposes. This method has resulted in substantial savings in time and money, and has reduced typist fatigue.

COST SAVING ITEM—203



Xerography Process Saves \$3,600 Yearly In Duplicating Labor Costs

Taylor Instrument Companies, Rochester, N. Y., is saving about \$3,600 a year in labor costs by making offset paper masters by the xerography process. Papers to be duplicated are transferred to offset paper masters by xerography and multiple copies run off on an offset duplicator. Formerly these subjects were copied on to paper masters, proofread and corrected, requiring hours of typing time. Now the approved original copy is transferred to a paper master by xerography in less than three minutes. The saving in copying and proofreading averages \$3.00 per page. Xerography is a dry, direct positive electrostatic process using no chemicals, water or film.

COST SAVING ITEM—204





*Just as milk is homogenized to produce an even distribution of cream throughout, so Venus Velvet lead is "homogenized" to produce a smooth, even mixture of clay and graphite. Actually, this exclusive Colloidal Process explodes the clay and graphite into minute particles finer than French talc, achieving a perfectly mixed blend, with no hard spots, no soft spots.

Colloidal Process makes VELVET lead smoother



In solution ordinary lead mixture will not pass through filter paper

In colloidal solution finer VELVET lead mixture passes through filter paper.

The smaller particle-sizes mean that more tiny impressions of lead are made on the paper in any given stroke. The result is the blacker, more precise writing you get only from the Venus Velvet.

See your commercial stationer.

nothing writes like a

VENUS
velvet

Venus... trademark of fine craftsmanship in pencils.

American Pencil Company, Hoboken, New Jersey

Office Equipment



Tabulating Card Maintains Inventory Control, Simplifies Paperwork

A New England watch manufacturing company maintains full inventory control and simplifies its paperwork system by writing the original source record of goods received or material requisitioned from stock on a "dual" tabulating card inserted in a special register. Cards go directly to tabulating department. The register duplicates identical record on multiple-part forms used to "process" the actual material moves—hence tabulated inventory reports not only reflect the true conditions but are more timely.

COST SAVING ITEM—205

Bank Saves 18% Floor Space

Installation of modular work stations in the main office instalment loan department of The Citizens & Southern National Bank, Atlanta, Ga., immediately resulted in an 18% savings in valuable floor space. In addition, each employee was given greater desk top working area that is 100% usable.

COST SAVING ITEM—206

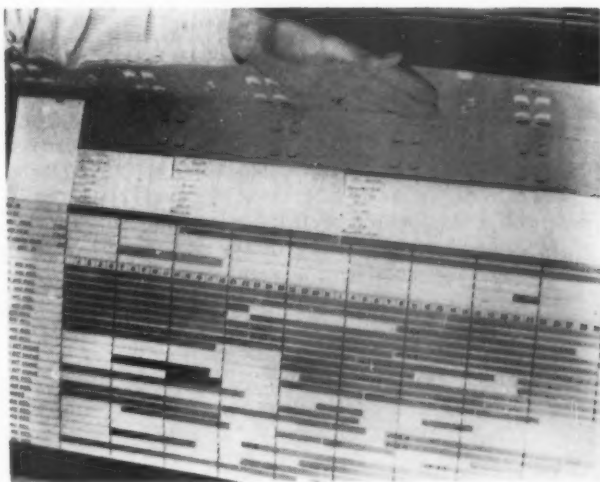


Business Machines Cut Work 2/3, Save \$48,000 Each Year

The task of completing large weekly payrolls within a limited period of time is no longer a problem for the National Biscuit Company, New York City. New office machines do more than two-thirds of the work automatically, and have brought about savings of \$48,000 a year through direct savings and increased efficiency. This repays their cost every 19 months. The machine in the foreground is used for posting accounts payable, while the accounting machine in the background is used to compile payroll and distribution records. The smaller machine is a full-keyboard adding machine of heavy duty construction.

COST SAVING ITEM—207

Office Equipment



New Production Scheduling System Increases Output Approximately 20%

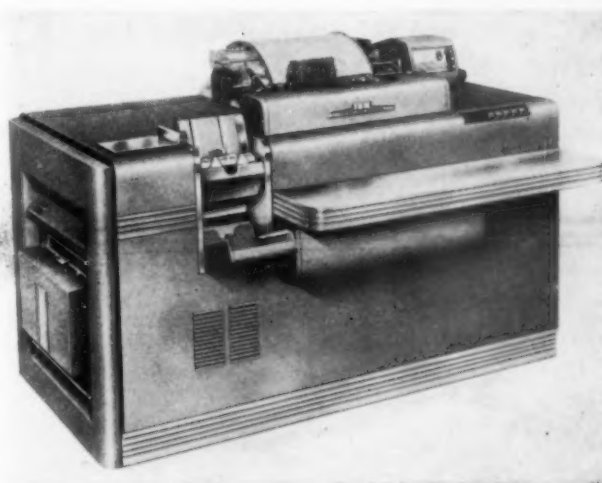
An estimated increase of about 20% in production has been realized by the Aluminum Goods Manufacturing Company, Manitowoc, Wis., since the installation of a new system of production scheduling and control that gave insurance against work stoppages due to production bottlenecks. The company manufactures some 2,000 items, parts and sub-assemblies. Under the new system each piece is scheduled by machine or unit in each department as it goes through the factory. Executives can see what items are scheduled for manufacture, and dates they will be ready for shipment, weeks ahead of time. They can visually follow and check the item's daily progress from the moment the order is recorded to its shipment.

COST SAVING ITEM—208

Costs Down 14%; Performance Up 100%

In 1947, a large southern laundry was handling most office work manually with a minimum use of office machines. Accounting machines and other equipment was installed initially to handle sales recording and analysis, accounts receivable and payroll. In the next five years, equipment use was extended to all types of accounting operations and preparation of almost all types of accounting records. As a result of machine methods, office expenses as a percentage of sales were reduced from 4.40% in April, 1947 to 3.82% in January, 1953. Overall results: performance improved 100%, costs went down 14%.

COST SAVING ITEM—209



Portable Microfilm Camera Cuts Auditors' Traveling Time

A completely portable 16 mm. microfilm camera has made possible substantial savings in time and labor for many chain store traveling auditors. Formerly these auditors had to travel from city to city and spend days in each location copying various records and making notes. The new portable camera makes it possible to make "one-day stops" many places along a route, since it is a simple matter to pass documents through the completely motorized, 20-pound microfilm camera. The camera also makes it possible for receiving departments to maintain a complete, readable record of all receiving slips coming in.

COST SAVING ITEM—210

Office Equipment



Continuous Typing System Doubles Production Per Operator-Hour

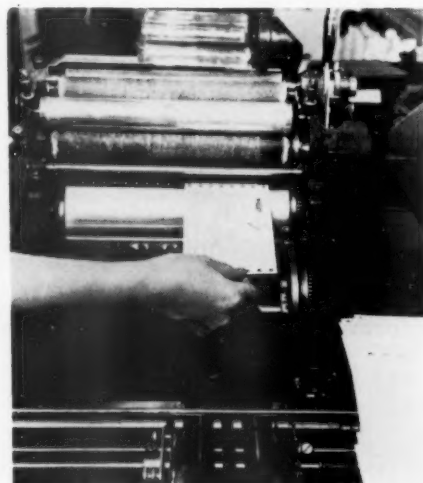
By making the typing of invoices a continuous process on specially equipped electric typewriters, a Midwestern sash and door company has easily doubled its former production per operator-hour. Billing volume averages 300 a day. Improvement enabled the company to let several days' work accumulate, to be done in a few hours by two typists. Automatic equipment ejects continuous forms to the first writing line of a new invoice in one quick motion.

COST SAVING ITEM—211

Give Exact Number of Labels In 75% Less Time

The exact number of shipping labels required for the packages in a given order are now prepared by a Midwestern candy company in 75% less time than formerly, through the use of extensive files of address plates. Shipping information is now tabulated on one master label for each order (from the same deck of punched cards used to write invoices) as pre-printed paper plates in continuous form feed through the tabulating machine. Label itself shows the number of packages in the shipment. If more than one package, master label is put on offset duplicating machine to reproduce quantity of complete labels needed.

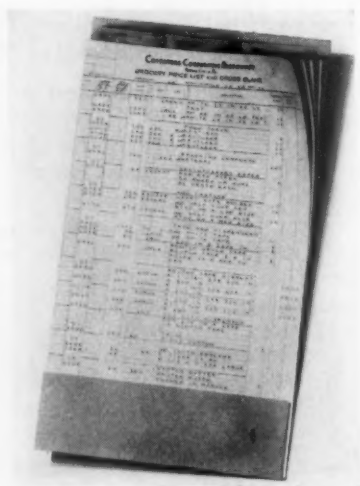
COST SAVING ITEM—212

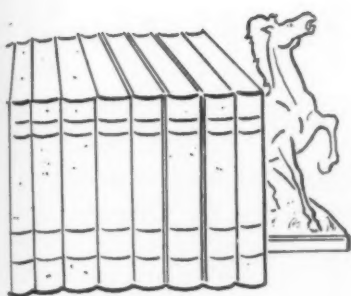


Coded Invoicing System Cuts Time By 1/3, Brings 15% Dollar Saving

Consumers Cooperative Association, a wholesale grocery firm in Kansas City, Mo., has reduced invoicing time by one-third and realized dollar savings in handling of at least 15%, since it began using a new coded pricing, ordering and invoicing system. Now price lists are revised weekly, giving customers complete, accurate, up-to-the-minute price and stock information. This has increased sales, reduced selling personnel and satisfied the company's desire to better serve its customers.

COST SAVING ITEM—213





Publisher Selects STEEL AGE for Greater Office Efficiency



FIELD Enterprises, Inc., publishers of the *World Book Encyclopedia* and *Childcraft*, recently moved its central offices into one of the nation's most modern and efficient work-areas—the fifth floor of Chicago's Merchandise Mart. Striving for maximum comfort and efficiency, the company selected *Steel Age* as the basis for its efficient, work-speeding "flow arrangement." For quality built, functionally designed *Steel Age* office furniture enables employees to do *more and better* work with less effort. That's why the installation of over 600 *Steel Age* desks, files and tables at Field Enterprises was regarded as such a sound investment. Your *Steel Age* Dealer will gladly show you how he can help make your office a better, more pleasant place in which to work. *Call or see him today!*

The Merchandise Mart is the world's largest commercial building and buying center. It has a gross area of 93 acres.

Steel Age

CORRY-JAMESTOWN MFG. CORP., CORRY, PA.

BRANCH OFFICES: Boston • New York • Philadelphia • Atlanta • Chicago • Los Angeles • San Francisco

Office Equipment



Production Planning System Cuts Lead Time From 90 To 60 Days

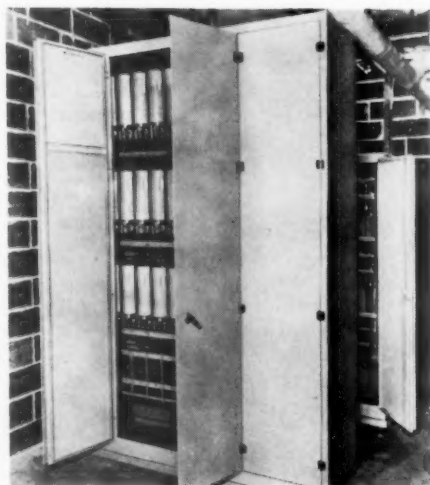
The Pyle-National Company, Chicago, cut its lead time from 90 to 60 days through the installation of a new production planning system. The system actively controls 25,000 items, increases turnover and lowers capital investment. In addition, extra clerical help is unnecessary at inventory time. At all times, complete inventory is controlled from raw material through final sale.

COST SAVING ITEM—214

Owning Inside Phone System Saves 76% Of Rental Costs

A recent study at Felt & Tarrant, Chicago, shows that their 35-year-old business telephone system for all inside calls has saved the company 76% of what their costs would have been if they had rented the same equipment. The study also shows that the value of the time saved by an abundance of telephones pays for the entire system in seven months. The value of summoning maintenance men by accessory code call equipment adds still further savings of \$35.00 per day.

COST SAVING ITEM—215

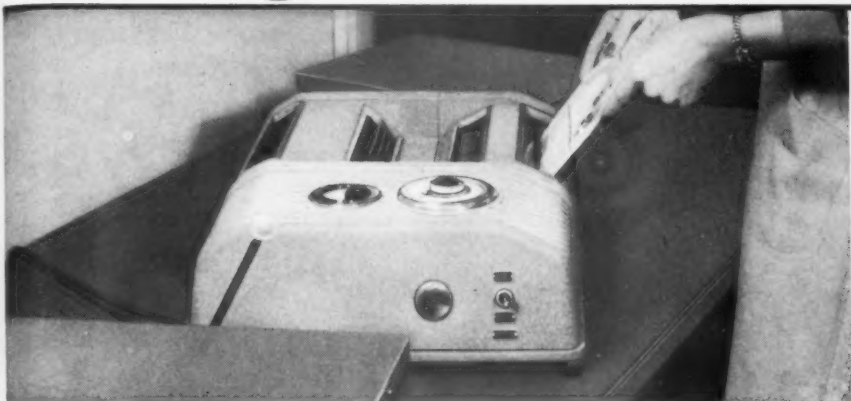


Window Trimming Print Costs Reduced by 80%

A Nashville, Tenn. chain of 300 retail shoe stores has a major window trim four times yearly. Detailed instructions must be sent to each store manager with photographs of a model window. Window photographs formerly were purchased from a photographer at 50 cents a print. Today the chain makes its own sepia tone photographs on a modern copying machine that was already installed for invoicing and other purposes. The new cost: 10 cents per print and a savings of \$2,000 a year.

COST SAVING ITEM—216

Remington Rand Methods News



New Time-Savers for Purchasing Departments

Perhaps yours is one of the many purchasing departments where the need has been felt for time-saving office equipment, but action has been stymied by budget limitations. If that is the case, here's interesting news.

Your requirements for photocopies of records, drawings, specifications, etc. can now be met at low cost by either of two recently perfected Remington Rand methods.

One! Transcopy Duplex

A single-unit machine, Transcopy Duplex, does the complete job of exposing, developing and printing photocopies, and does it all in a matter of seconds. No darkroom needed, no running water—you can use it anywhere, move it anywhere. "Installation" is merely a matter of plugging it into any standard electrical outlet. You get perfect, ready-to-use, positive prints up to 14½ inches wide and of any length. And there's no trick to it, either. Anyone—even the most unmechanical-minded office girl—can learn the simple Transcopy Duplex operation in a few minutes and be an expert at it from there on. Interested? Just mark (P-344) on the coupon below for free folder.

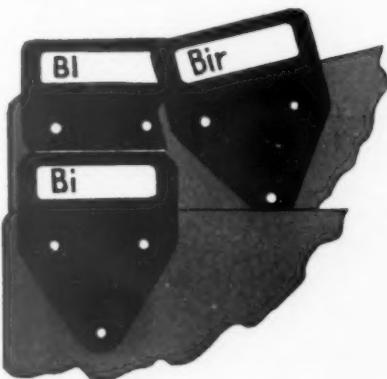
Quick Way to "Broadcast" Requests-for-Quotation

REQUISITION		QUOTATION	
NO.	DATE	NO.	DATE
1		1	
2		2	
3		3	
4		4	
5		5	
6		6	
7		7	
8		8	
9		9	
10		10	
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20		20	

Did you know that a single typing can produce individually addressed requests in duplicate to several different vendors? Read about Remington Rand Multisets in free booklet X1202. Use the coupon.

Two! Portagraph & Transcopy

If you now have a Remington Rand Portagraph or other device for exposing photocopies, there's a second Transcopy model that will team up with it to save time on the total job and eliminate messy, space-wasting developing equipment. Many users have chosen this combination of equipment because Portagraph can copy from opened booklets, pamphlets, magazines, etc., making it unnecessary to separate individual sheets from the bound original volume. Ask for P-334 and you'll have the full story.



A word of caution re filing systems

Don't throw good money after bad. If a filing system requires a complete new and more extensive set of guides every year to take care of expansion, better throw it out right now. Switch to Remington Rand Variadex, the top-notch, world-recognized system that expands without waste. Descriptive folder LBV-275 is yours free on request. Use the coupon.

Coming Soon—Completely Descriptive Low-Priced Bookkeeping Machine

In just a few weeks, you'll see a radical change in the ideas most companies have about bookkeeping machines. A new Remington Rand model, on which we're now building up our stocks to take care of the first rush of orders after the formal announcement in June, will provide full description and other "big machine" features at a low price that will amaze you. Keep it in mind for uses in your company where a top grade machine costing several thousand dollars has not been considered economical and where low priced machines have not been quite equal to your requirements until now.

Steel Files for Immediate Delivery

No delays if you act now. Our present stocks of Aristocrat Filing Cabinets—Letter and Legal in two, three, four and five-drawer models, Tabulating Card files and special files for all card record sizes, are adequate at last and your orders can be filled promptly. Why not check your requirements against the helpful data set forth in our free folder LBV-396.

Time-Saving 3-in-1 Purchase History Record

If you have a copy of the handy new Remington Rand manual "Purchasing Procedures That Save Time and Money" (and if not, just check No. X1202 on coupon below) open it to page 5 and there you'll find a 3-in-1 purchase record that helps slash the time between your receipt of requisition and your placing of order. In a single Kardex pocket for each item it gives you (1) a Master Card for all specifications and other basic data; (2) a Purchase History Card for a long-range price and delivery record; (3) a Current Quotation record.

Remington Rand

Management Controls Reference Library
Room 1965, 315 Fourth Ave., New York 10

Please circle literature desired:

P-334 P-344
LBV-275 LBV-396 X1202

Name _____

Title _____

Company _____

Address _____

City _____

Office Equipment



Inventory Savings of 25% Through Stock Control By Inside Phones

Geo. B. Carpenter & Company, Chicago, maintains sales volume with only three-fourths of the inventory formerly carried. Everyone at Carpenter's has a separate inside telephone. For last-minute data on stock of anything they sell, salesmen merely dial and speak over a loudspeaker serving the correct warehouse area. Warehousemen reply over microphones direct from the aisles or the shelves or bins. There is no delay, no red tape and no errors. And the need for some \$200,000 investment in extra inventory is eliminated.

COST SAVING ITEM—217

Visible Vertical Record Keeping System Saves Cost of One Man's Time

The installation of a visible vertical record keeping system has saved the Sundstrand Machine Tool Company, Rockford, Ill., the cost of one man's time in controlling their inventory of 35,000 items. Among other things the system features an automatic permanent requisition which eliminates the necessity of the supervisor writing requisitions. This eliminates transcription errors and gives the supervisor a completely accurate review of requisitions without reference to the master inventory records.

COST SAVING ITEM—218



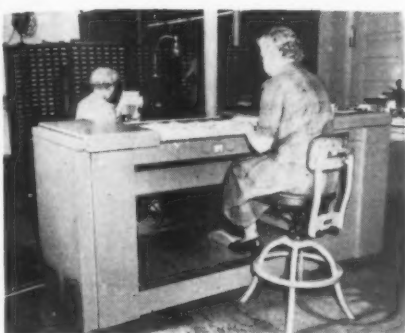
Filing System Cuts Work 50%, Saves Space

A motorized rotary filing system has enabled The Weatherhead Company, Cleveland, to save more than 70% of valuable floor space formerly occupied by visible tray files, and reduce work by 50%. The motorized rotary system brings records to the fingertips in seconds and eliminates awkward posting operations. There is no necessity of removing the card from the files for posting. One person now makes 12,000 to 14,000 postings each month, whereas two and sometimes three operators were required to do a similar job under the old setup.

COST SAVING ITEM—219



Table Top Filing System Speeds Work, Reduces Size of Files



A new type of table-top filing system now used by Dartnell Publications, Chicago, makes it possible to keep all records in less than one-half the space formerly needed. In less than one minute, a seated clerk can locate any desired card. The company had been faced with the problem of keeping separate files on all customers in each of the company's multiple activities. A file system was instituted, using a 3 x 5 index card containing the imprint of the addressing plate, with printed spaces indicating the type of purchase, and thus the files in which the addressing plates appeared. The fault with the plan was that the space required for storing 100,000 index cards made it difficult to find information quickly. The new file setup solved the problem.

COST SAVING ITEM—220

New Addressing Plates Save Magazine \$3,456 Annually



Tele-Views Magazine in Los Angeles saved \$3,456.32 annually by a changeover from iron alloy addressing plates to a new-type composition addressing plate. Annual plate requirements were cut approximately 50%. Operators handle one-third less weight per day; embossing errors can be corrected up to five times and more without blanking down characters, reducing plate requirements up to 50%; new—
(Please turn to page 224)

Tip from America's Top Secretaries

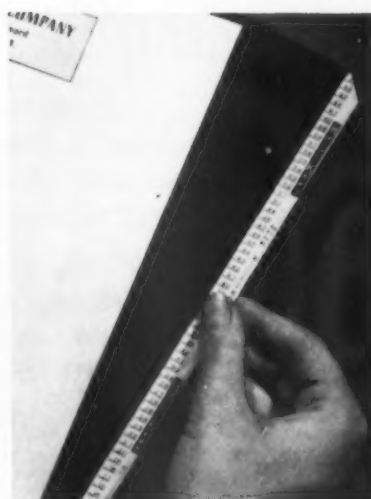
"The numbered scale edge is a time-saver and a great convenience" ..says ADELAIDE SMART
Secretary to
Mr. Richard S. Morse
President of the
National Research
Corporation
Cambridge, Mass.



Webster's MultiKopy Micrometric Carbon Paper helps secretaries turn out neater work faster. It saves time wasted in re-typing letters; cuts costs in day-to-day office operations.

Micrometric's numbered scale edge shows exactly how many lines of typing space remain on every page. Letters can be centered and spaced perfectly with no "guesswork", no danger of running over the page. Letters look better, too, because Micrometric impressions are always clean and sharp. And with the uncoated scale edge it's easy to remove carbon sheets without smudging.

Micrometric's long-lasting coating and the exclusive numbered scale edge cost no more than other high quality carbons. You'll find Micrometric at stationers everywhere along with a complete line of Webster typewriter ribbons and duplicating supplies. Or write to



F. S. WEBSTER COMPANY

7 Amherst Street, Cambridge 42, Mass.

IN THE BEST PLANNED OFFICES

Crest LINE OF COURSE



Planning to do more business...

Keeping the sales curve up is, after all, the job always on top of the pile. Security CRESTLINE office furniture can help you do just that. Good looking offices put your best sales foot forward to your customers. Real office efficiency makes it possible for all your personnel to do a better job. Offices that they are proud of help you to hold your top-notch personnel. Security CRESTLINE gives you all of these plus the long life of steel. See for yourself how CRESTLINE fits into your plans by sending for a CRESTLINE Office-Plan-Rule and the latest four color catalogue. A card or letter will bring you both . . . no obligation, of course.



SECURITY STEEL EQUIPMENT CORPORATION

20 MIDDLESEX ROAD • AVENEL, NEW JERSEY

(Continued from page 223)

plate design speeds inserting and removal, reducing labor up to 50%; plate finish changes color with embossing, cutting proofing and filing time over 25%, and speed of stripping plates from frame through use of new tool saves 75% labor.

COST SAVING ITEM—221

Portable Photo Copier Pays For Itself In 10 Months



A portable photo copying machine purchased by D. K. MacDonald & Company, Seattle, Wash., insurance firm, paid for itself in about 10 months and eliminated the possibility of error in transcriptions. The company formerly bought about 40 photo copies a month at a cost of \$1.00 each. Now the new \$400 machine makes the copies quicker and easier and eliminates about 31 cents worth of clerical typing time on each copy made.

COST SAVING ITEM—222

Mechanized Sales Recording And Accounting System Saves \$42,000



Since installing a complete mechanized sales recording and accounting system, R. J. Goerke Company, Elizabeth, N.J., has had a direct savings of \$42,000 a year. This savings pays for the machine every 18 months, giving them nearly 70% annual return on their investment. The charge phones provide a posi-

tive authorization of charge sales in about 30 seconds. The cash register equipment gives this department store instant control over all cash and charge sales. Service is speeded and expenses reduced through elimination of cashier stations and hand-written sales slips. The system gives a complete picture of each day's net sales—by clerks, by departments and by transactions—before the close of the business the following day.

COST SAVING ITEM—223

Duplicating Time Cut 50% By New System



Treadwell Engineering Company, Easton, Pa., has reduced the time required to duplicate bills of materials by 50% through the installation of a new system and new equipment. This saving in time was realized without changing the setup of any of the standard preprinted forms in use. The utilization of various sizes of folded stock and preprinted forms to add, delete, and substitute information has eliminated repetitive writing and has expedited the entire preparation of bills of material. Scheduling of production, purchasing of materials and parts, requisitioning and handling of raw stock, and records to sales, accounting and traffic departments, are all prepared by putting through the duplicator successively preprinted and plain paper sheets, and other pieces which have been folded to delete information or for the recording of subsequent operation data. One master suffices for duplicating the entire lot of diversified forms.

COST SAVING ITEM—224

See Classified Section

Page 500



Gilbert

Envelope Bonds
Tub-Sized, Air-Dried
New Cotton Fibre Content



**You're right,
young lady . . .**

You don't have to pound envelope flaps to get

them to seal . . . not if you use the new Gilbert Envelope Bond.

You see, Gilbert Envelope Bond is a special type of paper. It gives you all the crisp quality and sparkling appearance of new cotton fibre content, yet the moistened glue sticks to it firmly at the first touch. There's no curling . . . no springbacks, and Gilbert Envelope Bond will stay tightly sealed until it

is opened at its destination.

And that's not all . . . the gleaming white of Gilbert Envelope Bond has unusual opacity . . . protecting its contents from any snooping. It lies flat and works perfectly on high-speed mailing machines, too.

For a perfect team, use a Gilbert Bond for your letterheads and a matching Gilbert Envelope Bond for your envelopes. Ask your printer, lithographer, or engraver to show you samples. There are four grades of Gilbert Envelope Bond:

Lancaster Envelope Bond . . . 100% new cotton fibre
Radiance Envelope Bond . . . 75% new cotton fibre
Resource Envelope Bond . . . 50% new cotton fibre
Gilbert Envelope Bond . . . 25% new cotton fibre

*Gilbert—America's most complete line of
quality business papers.*



The PEN that FILLS ITSELF

A new kind of desk pen—
with the fountain in the base instead
of the pen. Pen instantly fills
itself every time you return
it to the socket.



Finger grip never touches ink. No chance for ink to touch you.

Fountain base "ink-locked" against accidental spillage. Only the pen unlocks the ink—pen writes 300 words or more without re-dipping.

TO SELECT OR REPLACE
... HERE'S ALL YOU DO



Fountain base holds 40 times more ink than ordinary fountain pen. Won't leak. Won't flood. Easy to clean as a saucer.

CHOOSE the right point for the way you write—by number

Ask your stationer for a demonstration

Only a few of the more popular point styles shown

Esterbrook®

DESK PEN SETS

THE ESTERBROOK PEN COMPANY, CAMDEN 1, NEW JERSEY

THE ESTERBROOK PEN COMPANY OF CANADA, LTD., 92 FLEET ST., EAST, TORONTO, ONTARIO

COPYRIGHT 1959,
THE ESTERBROOK
PEN COMPANY

Payroll, Distribution Machine Saves \$11,000 Per Year



Payroll and distribution machine used by the New York Herald Tribune gives a direct savings of \$11,000 a year with one machine, which replaced two. It also eliminated about \$1,000 a year in overtime. These savings paid for the equipment in less than six months. All payroll checks are printed and totaled by the machine at the same time. All records are original print, no carbon is used. The equipment writes 160 to 170 checks an hour, compared with the previous speed of 30 to 40. The same equipment processes all quarterly Social Security reports and annual W-2 statements.

COST SAVING ITEM—225



Yes, sir, 4 Northwest "V" expanding file drawers have the equivalent in "workable capacity" of 5 conventional files with rigid fronts. Letters can be easily removed—and replaced without touching the followers. Drawer contents are tightly compressed when drawer front is swung closed. File clerks everywhere like them, for they're time savers and reduce filing fatigue. Made in 2, 3, 4 and 5 drawer models. Order today satisfaction guaranteed \$67.50 F.O.B. Green Bay. Immediate delivery or write for complete details.

NORTHWEST METAL PRODUCTS CO.
1337 E. MASON ST. • GREEN BAY, WIS.

50% More Work Done With Same Amount Of Personnel



Officials of Clinton Foods, Inc., report 50% more reproduction work being accomplished with no additional personnel required, through the use of a new photo copying machine. Without adjusting for size, the machine can produce in seconds an error-proof, black-on-white copy of any office form or report from a large accounting worksheet to a letter, invoice or memorandum.

COST SAVING ITEM—226

Visible Record System Saves On Purchases, Labor for RCAF



The Royal Canadian Air Force economizes on purchases and clerical help through the use of a visible record keeping system for stock control, by being able to minimize their purchases and eliminate overstocking of materials. Because of the tight control and the speed of acquiring information gained through the use of this system, they are able to transfer surplus materials from depot to depot as requirements arise. As a result, unnecessary purchasing of materials is eliminated. In one year's operation with this system the number of items in the control has increased over 50%, from 106,000 to 160,000 items. In spite of this increase, it was necessary to add only one person to the staff.

COST SAVING ITEM—227

"Better Seating Reduces Work Fatigue

In Our Regional Offices"

Says Charles Lahr, Jr., United States Plywood Corporation. He thanks Cosco seating for less absenteeism . . . higher work output.



COSCO CHAIRS Are Designed By Seating Engineers To Reduce Fatigue... Increase Efficiency!

Like the famous "Cosco Executive" and other Cosco office chairs, this handsome posture-right Cosco side chair is engineered to give superlative comfort. It takes the fatigue out of office conferences . . . puts your office guests at ease . . . in reception room, conference room or private office.

With sturdy all-steel construction, foam-rubber-cushioned seat, Tufflex-padded contour backrest and DuPont "Fabrilit" upholstery, here is a chair that is practically indestructible. And its extended legs prevent wall-marring. Frame is finished in Bonderized (baked on) enamel. Enamel and upholstery in choice of colors. For full details, mail coupon today.



MODEL 20-LA COSCO CONFERENCE SPECIAL SIDE CHAIR

Only

\$27⁵⁰*



Model 18-TA
The COSCO
Executive
\$47.50
(49.50 in Zone 2)



Model 15-F
Secretarial
\$29.95
(\$31.00 in Zone 2)

BETTER SEATING means BETTER WORK

**HAMILTON MANUFACTURING
CORPORATION**
Columbus, Indiana

**COSCO Office
Chairs**

*\$28.50 in Zone 2: Florida, Texas and 11
Western States

Hamilton Manufacturing Corporation
Dept. P-5, Columbus, Indiana

Yes, I should like to have your data on better
office seating. I am especially interested in

- ☐ Secretarial Chairs
☐ Executive Chairs
☐ Side Chairs

Firm

By

Address

City..... Zone..... State.....

B & P Standard
Visible Record Sheets—
**PERMANENT!
TOUGH!** because...
**BRASS
WON'T
TEAR**
Visible No Tear®

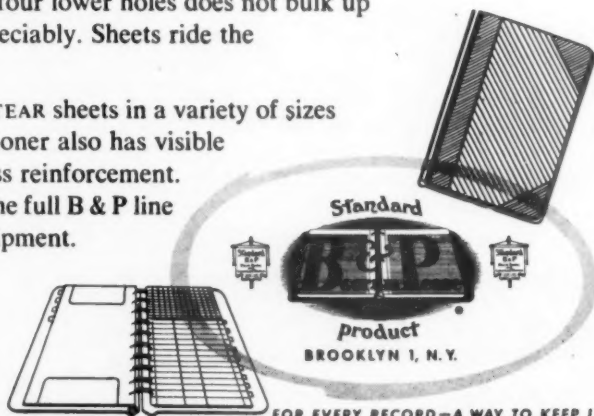


Only Boorum & Pease makes visible record sheets reinforced with this thin layer of brass. Sheets are of durable rag-content ledger papers.

That's why B & P NO TEAR sheets are unmatched for permanent records and for records given hard, long usage.

Because of special construction, the thin brass reinforcement on the four upper and four lower holes does not bulk up the binding edges appreciably. Sheets ride the prongs more freely.

You can get these NO TEAR sheets in a variety of sizes and rulings. Your stationer also has visible sheets without the brass reinforcement. Ask him to show you the full B & P line of Visible Record Equipment.



FOR EVERY RECORD—A WAY TO KEEP IT

Filing Space Reduced 45%



Special requests for copies of a State Attorney General's opinions necessitated the filing of 50 to 55 extra copies so long as the opinion was effective. Filing space was a big problem. To thin out the files, the Attorney General's Office purchased a modern copying machine and replaced the extra opinions with single copies printed on a translucent paper. Now extra copies are quickly made as requests are received. Reports are completed faster and the Attorney General says his office can now give much more satisfactory service.

COST SAVING ITEM—228

Automatic Calculators Save Time



Considerable time is saved by the accounts payable division of Signal-Stat Corporation, Brooklyn, N.Y., through the use of fully automatic calculators featuring a permanent printed record. Accuracy, ease and speed of operation, combined with the advantage of checking all calculations through the printed tape, result in time saved.

COST SAVING ITEM—229

Bellamy Named To Head Diebold Milwaukee Branch

D. L. Bellamy has been named manager of the Milwaukee, Wis., branch of Diebold, Inc. Mr. Bellamy joined the Diebold sales organization as a salesman in the New Orleans branch in 1946. In 1950, he was named manager of the Diebold branch in Seattle, Wash.

New Accounting Machine Developed By Burroughs

A new machine which produces accounting records and simultaneously codes the information on punched paper tape, has been developed by the Burroughs Adding Machine Company, Detroit, Mich. An engineering model of the machine was shown for the first time at the Annual Conference of the Association of Mutual Savings Banks in Philadelphia, Pa., recently.

The machine consists of an electro-mechanical punch unit connected by cables to a Sensimatic accounting machine. No information is available yet regarding the manufacture of the machine for sale.

1 1 1

Maso Steel Products Making New Posture Chair

A new spring back posture chair with all three basic posture chair adjustments is now being added to the line of chairs, stools and office machine stands made by Maso Steel Products, Chicago, Ill. It is known as the "Econome", Model No. 925B. Made of steel and steel tubing, it is available in office gray, green or brown.

Labeling's a Pleasure!

Finding's Made Easy!

with Pressure-Sensitive

BIND-X

HANDY NEW LABEL HOLDER

A Cel-U-Dex Product

For office, plant and home labeling of Books, Binders, Boxes, Bins, Drawers, Shelves, Cabinets, Plans, Maps, Albums, even your Galoshes!

JUST INSERT

Your typed, written or printed label in Bind-X and

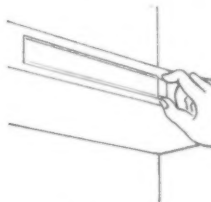
STICK IT ON

Sticks to metal, wood, leather, fiber, paper, glass, plastic, cloth, stone. Clear transparent window in choice of 8 colors. Half-inch or one-inch face. Sturdy reinforcement. Backed with latex adhesive. At stationers.

6" length

30¢

Makes 3 usual label holders. Use flange-type Bind-X for POST BINDERS.



CEL-U-DEX

1 Main Street, Brooklyn, N. Y.

stock room sharpie



everybody's friend, has all the answers, on his toes, naturally — he's

★ **"APSCO SHARP."** He keeps an extra stock of APSCO Sharpeners on hand for "efficiency minded" bosses and secretaries.

For his department's needs he's installed the **APSCO Giant Deluxe Model 51**, with the selector dial.

Perfect wherever a variety of pencil sizes are used. Practical too, the receptacle fastens to the frame in any position so that installation may be made to wall, under shelf or on a window sill.

There's an APSCO Sharpener for every pencil sharpening need. Look for the **APSCO Trade Mark**, it's your assurance of quality.

automatic pencil sharpener co.

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MORRIS Safe-T-Set

IT'S NEW!... the newest member of a famous family... most important development in desk-top convenience in years! With full two-ounce ink supply, long-lasting hard tip and exclusive safety feature, Morris Safe-T-Set gives months of perfect writing in perfect safety! Your choice of colors! Ask for the Safe-T-Set by name or write direct to

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Montreal, Que.

Every Purchasing Agent Should Have These Three Books

"Management of Industrial Inventory"—\$4.75

By Benjamin Melnitsky
Foreword by Stuart F. Heinritz

Here is complete and reliable information on inventory budgets, obsolescence, simplified materials controls, standard classifications, interchangeability, parts handling and storage—and on through every phase of your inventory control work.

How to set up a complete inventory control system... how to organize the inventory manual... how to use simple formulae that spotlight return on inventory investment... how to keep your in-process inventory under daily control... all these and more are explained thoroughly and concisely.

You will have available cost-cutting help and actual case studies on the physical inventory manual—receiving department and storesroom—physical identification—records, reports and forms—taking the physical inventory—materials handling—probable consumption—and many more.

Free 10-day Examination

"Materials Buying Manual"—\$4.85

By Harold A. Knight

How you can cut costs through buying the right material for the best job—this is the valuable information you will find in this money-saving book.

You will find authoritative help on pricing methods, basing points, ordering procedures, common sizes and quantities, production centers, types of shipping containers, most profitable uses—for practically every key material you use and buy.

Free 10-day Examination

"Profiting From Industrial Standardization"—\$5.50

By Benjamin Melnitsky
Foreword by Stuart F. Heinritz
PUBLICATION IN JUNE

You will find complete and down-to-earth information on materials standards and specifications... purchasing, process and finish specifications... parts standards... manufacturing standards... design practice standards... proper review intervals... and on through the entire subject of how your company can benefit from a standards program.

How to use tested methods to develop and revise standards—how to organize and use a nomenclature system—how to allocate standards activities, responsibilities and authority—how to organize company standards—all these and more are explained thoroughly and concisely in this practical guidebook to industrial standardization.

Free 10-day Examination

CONOVER-MAST PUBLICATIONS, INC.

Book Division
205 East 42nd Street, New York 17, N. Y.

Apsco Products Releases New Sharpener, Loose-Leaf Catalog

Apsco Products, Inc., Beverly Hills, Calif., introduced its newest pencil sharpener, the Premier deluxe portable, at the recent N.S.O. E.A. convention in Chicago. The sharpener features an attractive design and rubber base, and requires no installation.

Apsco also has released a new file-size catalog, featuring the complete line of Apsco products now available. The catalog is of the loose-leaf type, so that pages on new products or models may be easily added. Included are individual reproductions and detailed information on each of the Apsco pencil sharpeners currently featured. Also, such new products as the Swedish staplers, the Apsco stapler 2002 and the Apsco 4004, plus the modern envelope opener, "The Saf-T-Cut."

1 1 1

Remington Publishes Two Filing System Booklets

Two booklets recently published by Remington Rand Inc., New York City, emphasize the importance of selecting the proper filing system to suit the needs of a business. One is entitled "Filing Systems to Fit Your Measure," and can be obtained by requesting folder LBV-295C.1. It describes how modern business can save money, time, and labor by using simplified indexing systems tailored to suit special needs. The other booklet, "Expert Office Staffs for Rent," may be obtained by requesting BSD-2 from the company at 315 Fourth Avenue, New York 10, N. Y. It describes the services performed by the Business Services Departments of Remington Rand, including record analysis, punch-card service and microfilming.

1 1 1

New Deluxe Desk Dispenser Announced For Scotch Tape

A new deluxe desk dispenser for cellophane tape use in stores, offices and schools has been announced by Minnesota Mining and Manufacturing Company, St. Paul, Minn.

Designed to "Complement modern interiors", the new all-metal dispenser has a streamlined appearance with a baked gray enamel finish. It weighs slightly under three pounds. A bottom pad of sponge rubber holds it firmly in place during use. It will accommodate up to 1,296-inch rolls of "Scotch" brand cellophane tape in 1/2- and 3/4-inch widths.

Prominent Users of Strathmore Letterhead Papers: No. 105 of a Series



QUALITY gives momentum
in the long haul!

Long before the advent of the motor truck, Fruehauf was a significant name in transportation. Even before the turn of the twentieth century, August C. Fruehauf had a combination blacksmith shop and wagon-works in Detroit that was considered one of the best in the country. It was the pioneering persistence of this man that inspired the idea of perfecting a more "modern" wagon—a trailer—and coupling it to the newly-born gasoline engine—the motor truck.

Today, the largest builder of trailers in the world, Fruehauf still works with an insistence upon precision and a care for detail inherited from its founder. Even in its choice of a Strathmore Letterhead Paper for its correspondence, the insistence on *quality* performance is evident.

Whenever *quality* expressiveness is the standard of measurement by which a letterhead is judged, you'll find that Strathmore is by far the leading choice of successful business firms. For the *quality* of Strathmore Letterhead Papers represents integrity and reputation. Let your supplier show you your letterhead design reproduced on one of the Strathmore Papers... you'll see how much *quality* can really say!

Strathmore Letterhead Papers: Strathmore Parchment, Strathmore Script, Thistlemark Bond, Alexandra Brilliant, Bay Path Bond, Strathmore Writing, Strathmore Bond. Envelopes to match converted by the Old Colony Envelope Company, Westfield, Mass.

STRATHMORE MAKERS
OF FINE
PAPERS
Strathmore Paper Company, West Springfield, Massachusetts

AMONG THE Associations



—:— Your Convention Program —:—

Friday May 22

N.A.P.A. Executive Committee
 MEETS ALL DAY
 MEETING ROOM St. Louis Room
 LUNCHEON 20-22 Foy Room
 SETUP INFORM-A-SHOW
 EXHIBITION ROOMS—HOTEL STATLER

P.M.
 2:00

INFORM-A-SHOW HOTEL STATLER

The Inform-A-Show presents exhibits by the leaders of industry, plus the invitation to confer with technical and sales experts.

* * *

7:00

EARLY BIRDS' DINNER PACIFIC-SIERRA BALLROOMS HOTEL STATLER

and

BILTMORE BOWL

All tables reserved

Dinner Promptly at 7:00 P.M.

* * *

Saturday May 23

N.A.P.A. Executive Committee
 MEETS ALL DAY
 MEETING ROOM St. Louis Room
 BREAKFAST 20-22 Foy Room
 LUNCHEON 20-22 Foy Room
 INFORM-A-SHOW EXHIBITS ERECTED
 WATCHMEN, SIGN PAINTING AND OTHER
 FACILITIES AVAILABLE
 N.A.P.A. HEADQUARTERS SETUP
 New York Room
 LOS ANGELES CONVENTION COMMITTEE
 HEADQUARTERS SETUP Buffalo Room
 PRESS ROOM Dallas Room

Monday—May 25

A.M. BREAKFAST MEETINGS

7:30 N.A.P.A. Executive Committee
 Hartford Room
 7:30 Los Angeles Convention Committee
 Buffalo Room
 7:30 National Committee on Public Relations
 Foy Room

Monday Morning—May 25

GENERAL CONVENTION SESSION

Pacific Ballroom
 Hotel Statler

A.M.

9:15 *Call to Order*
 W. T. Reynolds, *Chairman*, General Convention Committee; *Director of Purchases and Stores*, Los Angeles Transit Lines, Los Angeles, Calif.
 9:20 *Invocation*
 Dr. J. Richard Sneed, First Methodist Church of Los Angeles, Los Angeles, Calif.
 9:30 *Greetings*
 E. H. Weaver, *Chairman*, General Program Committee; *Manager of Purchases*, Union Oil Company of California, Los Angeles, Calif.

(Please turn to page 240)

Sunday May 24

A.M. BREAKFAST

8:00 N.A.P.A. Executive Committee
 Hartford Room
 8:00 Los Angeles Convention Committee
 Buffalo Room
 N.A.P.A. Executive Committee Meeting
 Headquarters Locations
 Hotel Statler
 N.A.P.A. New York Room
 Los Angeles Convention Committee
 Buffalo Room
 Press Room Dallas Room
 Registration Ballroom Floor
 Directory Ballroom Floor
 Service Desks Ballroom Floor
 Inform-A-Show Ballroom Floor



UNMATCHED DEPENDABILITY THANKS TO BATTERY POWER!

You can always depend on battery-powered industrial trucks to work all day without letdown. They have fewer moving parts, fewer friction surfaces to cause downtime . . . have in-service records that can't be matched! In addition they are fool-proof, handle, lift and maneuver faster, run silent and fume-free. Keep them moving with *dependable* Gould battery power.

Visit us at the National Materials Handling Exposition,
Convention Hall, Philadelphia, Booths 335-337.



Specify
THE GOULD "THIRTY"—
America's Finest
Industrial Truck Battery

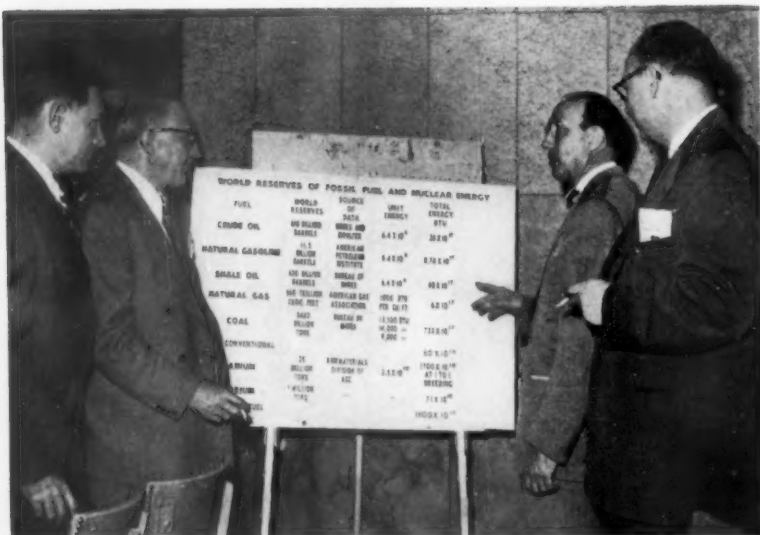
GOULD INDUSTRIAL BATTERIES

GOULD-NATIONAL BATTERIES, INC., TRENTON 7, N. J.

Always Use Gould-National Automobile and Truck Batteries

©Gould-National Batteries, Inc.

Chet Ogden, Detroit, Charles Wilson and Fred Bradley, Dallas, and Joseph Creevy of Newport, Ky., study one of Mr. Cisler's charts on energy sources, during the 22nd annual Midwinter Conference of the Public Utility Buyers Group.



Public Utility Buyers' Conference Considers "Trends For '53"

THE 22nd annual Midwinter Conference of the Public Utility Buyers Group, N.A.P.A., was held at the Roosevelt Hotel, New Orleans, March 9th and 10th. Attendance set a new high record, with 787 registrations, and the meeting room was packed for all sessions of the meaty and timely program, which covered the general theme of "Trends for '53".

Following the invocation by Dr. John S. Land of the St. Charles Avenue Presbyterian Church and opening remarks by Group Chairman J. R. Carmichael of the Georgia Power Company, Atlanta, the Monday morning session was turned over to Charles F. Wilson of Lone Star Gas Company, Dallas, presiding officer.

Visiting delegates were welcomed to New Orleans by George S. Dinwiddie, President of New Orleans Public Service, Inc., and N. J. Gubler of Johns-Manville Corp., President of the New Orleans Purchasing Agents Association. Both speakers called attention to the fact that the meeting coincided with the celebration of the 150th anniversary of the Louisiana Purchase, one of the "best buys" in our national history.

First speaker on the business program was J. J. ("Jack") Huether, Manager of Public Utility Sales, Apparatus Division of the General Electric Company, who discussed "Trends and Developments in Electrical Apparatus for the Power In-

dustry." Among the developments he cited were: more accurate meters; increased ratings of pole-mounted transformers — averaging 16.9 kva today, or more than double the 1947 unit rating of 8.3 kva; new techniques of impulse testing on the production line, increasing transformer dependability; new design



Program chairman J. R. Carmichael and general conference chairman James J. Morse were gratified by record breaking attendance at the meeting.

lightning arresters providing better system protection, and new high speed line reclosing to improve system stability and reliability, both permitting heavier line loading; higher temperature generator operation and larger units, made possible with new materials such as oriented grain strip steel for laminations, liquid coolants for stator windings,

and the new aluminum alloy, Condal; and new studies on pole installation and mechanical appurtenances to prolong life and reduce replacement and maintenance expense.

H. W. Christensen of San Francisco, Director of Purchases for the Columbia-Geneva Division of U. S. Steel Company, and President of N.A.P.A., next addressed the conference on "The Purchasing Agent's Responsibility in the New Economic Order." Stressing the changes in the economic and political climate in recent months, he declared that both sales and purchasing men must relearn their jobs after twenty years of slovenly habits, and do a real job of buying and selling in the new era of competition. Management recognizes the importance of the purchasing function and is demanding more constructive performance from its purchasing executives. This poses a three-fold responsibility — to do the job, fit the function, and meet the challenge — and demands of the buyer, in addition to his skills in actual purchasing, a background of economic knowledge, interpretive ability, and imagination.

Dr. Joseph Zimmerman, Editor of the *Daily Metal Reporter*, New York, spoke on "The Outlook for Copper." He pointed out that copper, in contrast to other non-ferrous metals, had experienced a sharp price rise after decontrol, and is currently selling at the highest price in

(Please turn to page 266)

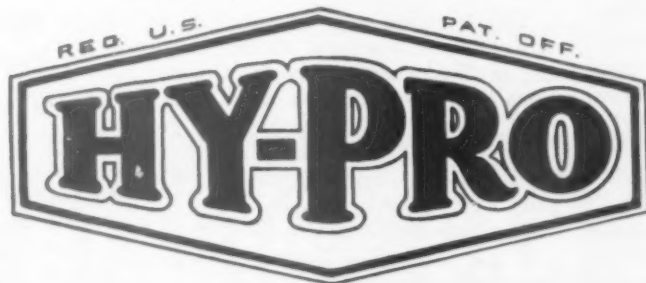
HY-PRO ENGINEERS ARE TAP SPECIALISTS!

...to help cut your tapping costs

Hy-Pro concentrates its operation on the production of taps. This allows its engineers and design specialists to continually aim their research and creative work at perfecting this one important line. Their established reputation of successfully meeting tap needs in all phases of production has been the result.

Whatever problem you may have in your own tapping operation—from a special job to one in your regular set-up—it will pay you to call your Hy-Pro specialists.

Get in touch with your local Hy-Pro distributor or our main office today for the full facts. Hy-Pro's full line of quality taps and its engineer specialists can help cut your tap costs.



HY-PRO TOOL CO., NEW BEDFORD, MASS., U. S. A.

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University 4-1077

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CHICAGO, ILL.
Newcastle 1-6486

P.A.A. Of Eastern New York Holds 19th Annual Executive Night Dinner In Albany

The Purchasing Agents Association of Eastern New York held its 19th annual Executive Night meeting March 19 in the DeWitt Clinton Hotel, Albany, N. Y. Following cocktails at 6:15 p.m., dinner was served to a large group of purchasing officials and executives of their companies.

Theodore Ten Eyck, president, presided at the meeting. Following reports of officers and committees, Harry T. Lieberman, national director, gave a complete report to the membership of activities on the national scene.

Nominations for officers for the coming year were announced by Joseph A. McCormack, chairman of the nominating committee.

The slate includes the following nominations: Charles F. Straney, national director; Kenneth B. Gordnier, president; Frank E. Plumley, vice president; J. D. Chesney, secretary, and William C. Bryant, Jr., treasurer.

Nominations for the executive committee include Harry T. Lieberman, Clyde M. Womer and Warren A. Wilber.

Mr. Womer was chairman of the banquet committee, assisted by H. H. Frair, W. J. Sharpe, R. H. Van Laer, and C. P. Spuck.

Orlo M. Brees, former member of the New York State Legislature, was the featured speaker and entertained the group with a semi-humorous discussion entitled "A Race Without Winners."

1 1 1

Record Attendance Expected At Educational Buyers Chicago Convention

A record attendance is anticipated at the annual convention of the National Association of Educational Buyers at Chicago's Edgewater Beach Hotel, May 6-8. The central location of the convention site and the interesting program scheduled is expected to draw educational purchasing agents from all parts of the country.

In addition to the full, completely balanced business program, which will afford members innumerable opportunities for perfecting their purchasing practices, the association has arranged for a well-rounded program of recreation and entertainment for the enjoyment of members and guests.



Officers of the Purchasing Agents Association of Eastern New York, shown at the 19th Annual Executive Night dinner are, left to right: Harry T. Lieberman, national director; Joseph A. McCormack, nominating committee chairman; Theodore Ten Eyck, president; Ralph M. Bleak, secretary; William C. Bryant, Jr., treasurer, and Clyde M. Womer, banquet committee chairman.



Success of the Eastern New York Executive Night dinner was due to the work of the banquet committee, consisting of, left to right: Clyde M. Womer, chairman; William J. Sharpe, Conrad P. Spuck, Harold H. Frair and Richard H. Van Laer.

The meeting will get underway with a business session on the morning of Wednesday, May 6, followed by a welcome luncheon with President Kermit A. Jacobson presiding.

Officers for 1953-54 will be installed at the annual banquet the evening of May 8. The newly-elected officers are: President, Forrest L. Abbott, Barnard College, Columbia University; vice presidents, Henry L. Doten, University of Maine; D. R. Kimrey, University of Oklahoma; Melvin T. Tracht, Illinois Institute of Technology; treasurer, John A. Pond, University of Colorado.

Gene Walker Seated As President Of Houston P.A. Association

Gene Walker was installed as president of the Purchasing Agents Association of Houston at the organization's annual Inaugural Ball in March.

Other officers seated were E. F. Foster, first vice president; Charles O. Brotherton, second vice president; W. J. McSherry, secretary and Paul W. Berry, treasurer.

New directors of the association are W. R. Bullen, James H. Cloninger and H. J. Woehrmann.



A SUCCESSFUL PRODUCT

IS FUSSY ABOUT ITS "CLOTHES"

There's a lot more to fitting a container to your product than just getting the right size. For example, consider an "ordinary" tin can.

First, the can must fit your product chemically. Some products are quite at home in an unlined can—others require one of Continental's twenty-five special enamel linings.

Next, our "can tailors" carefully consider the way your product is to be used, recommend what would be most convenient for your customers—a plain top, push-on lid, hinged lid, sifter top, pouring spout, handle, or any of a dozen other special features.

We consider, too, the closing and sealing methods and equipment employed in your plant. Whether or not the product develops internal pressure, and how much, how the product will be shipped and stored, whether it will be lithographed. And, of course, the cost of the container must be in line with the proposed selling price of your product.

It may be that your product doesn't belong in a can at all. The right container for it may be one of Continental's paper cups, lightweight fibre drums, bags or a steel drum or pail. But you can be sure that whatever container your product requires, Continental can provide a perfect fit.

If you are planning a new product or improving an existing one, let us take its "measurements" before you decide on a container.



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CONTINENTAL CAN BUILDING

100 E. 42nd ST., NEW YORK 17, N. Y.



TIN CANS



FIBRE DRUMS



PAPER CONTAINERS



STEEL PAILS AND DRUMS



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DECORWARE

the A-B-C of M-S-T

A ALWAYS
MAKES
POSSIBLE
B BETTER
PRODUCTS
C AT LOWER
COST



Michigan Electric Resistance WELDED STEEL TUBING

A
Quality
Product

Muffler Inlet Pipe

ROUND

1/8" to 4" O. D. 9 to 22 gauge

SQUARE-RECTANGULAR

1/2" to 2" 20 gauge, 1" to 2 3/4",
14, 16, 18 gauge

Carbon 1010 to 1025

Michigan Tubing

has uniform strength, weight, ductility, I. D. and O. D., wall thickness, machinability, and weldability. It can be flanged, expanded, tapered, swaged, beaded, upset, flattened, forged, spun closed, fluted, and rolled. Available in a wide range of sizes, shapes and wall thicknesses, prefabricated by Michigan or formed and machined in your own plant.

This is an excellent example of Michigan workmanship in the performance of several intricate fabricating operations to most exacting tolerances.

The pipe manifold end is expanded to 2.225" I. D., a flange superimposed, and a flanged ferrule press-fitted for immediate assembly to exhaust manifold. Two bending operations with minimum reductions permit full flow of gas to hold back-pressure to a minimum. Muffler end diameter of tube is increased by expanding and a bead superimposed to form a "gas-tight" joint.

Michigan engineering and fabrication know-how make for accuracy and economy in the manufacture of this and many other tubular products. Why not consult Michigan about your fabrication problem.



Consult us for engineering and technical help in the selection of tubing best suited to your needs.

Plus Fabricating of our own tubing Michigan is interested ONLY IN THE FABRICATION OF Stainless steel, copper, brass and aluminum tubing.

Michigan **STEEL TUBE PRODUCTS CO.**

More than 35 Years in the Business

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(Continued from page 232)

For Los Angeles Assn.

Frank D. Lortscher, President, Purchasing Agents' Association of Los Angeles; Signal Oil & Gas Company, Los Angeles, Calif.

For District No. 1

A. R. Lama, Vice President, District No. 1, N.A.P.A.; Los Angeles Brewing Company, Los Angeles, Calif.

9:45 Welcome to Los Angeles
Honorable Fletcher Bowron, Mayor of the City of Los Angeles.

10:00 President's Message

H. W. Christensen, President, National Association of Purchasing Agents; Director of Purchases, Columbia-Geneva Steel Division, United States Steel Corporation, San Francisco, Calif.

10:30 Presiding: H. W. Christensen, President, National Association of Purchasing Agents.

10:30 Materials and Price Outlook and Purchasing Policies
Robert C. Swanton, Chairman, N.A.P.A. Business Survey Committee; Director of Purchases, Winchester Repeating Arms Company, Division of Olin Industries, Inc., New Haven, Conn.

11:10 Management—Purchasing
John A. Hill, President, Air Reduction Company, New York, N. Y.

11:50 Report of Secretary-Treasurer
G. A. Renard.
Ladies Special Event

* * *

NATIONAL COMMITTEE AND GROUP SESSIONS
Luncheons

P.M.

12:15 PUBLIC UTILITY BUYERS' GROUP

Mission Room
Presiding: J. R. Carmichael, Chairman of Group; Georgia Power Co., Atlanta, Ga.

12:15 EDITORS' GROUP

Jonathan Club—404
Presiding: R. R. Ricker, Chairman of Group; Editor

(Please turn to page 242)

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Here is perfection!

ROEBLING makes the finest high carbon wire available to industry today. Roebling wire is absolutely true to specifications...absolutely uniform in gauge and finish. Manufacturers who try Roebling wire once, become Roebling customers from then on.

You *pay* for the best when you buy high carbon wire. Make sure that you *get* it! Always specify Roebling. John A. Roebling's Sons Corporation, Trenton 2, N. J.



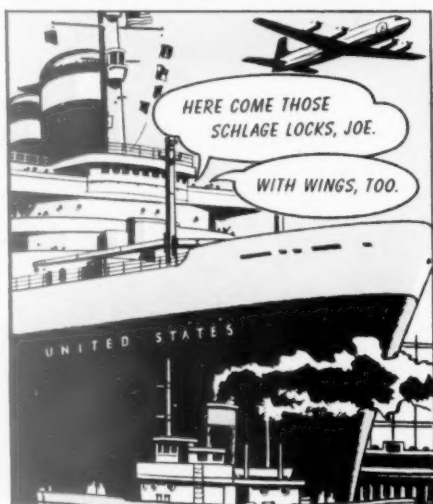
The Jonker, world's largest emerald-cut diamond.



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OFFICES IN PRINCIPAL CITIES • GENERAL OFFICES: LOCKHEED AIR TERMINAL, BURBANK 8, CALIFORNIA • CABLE: FLYTIGER

tor, The Midwest Purchasing Agent, Cleveland, Ohio.

12:15 SHIPMAN MEDALISTS
St. Louis Room
Luncheon — arranged by
Thomas W. Harris, Jr.

Monday Afternoon—May 25

GENERAL CONVENTION SESSION

P.M.

2:00 Presiding: C. F. Ogden,
Manager of Purchases, The
Detroit Edison Company,
Detroit, Mich.

2:10 From One P.A. to Another
G. A. Renard, Executive
Secretary-Treasurer, National
Association of Purchasing Agents,
New York, N. Y.

3:00 The Conditions We Face
Reese H. Taylor, President,
Union Oil Company of California,
Los Angeles, Calif.

3:45 Standards Cut Purchase
Costs
Roger E. Gay, President,
American Standards Association;
President, Bristol Brass Corporation,
Bristol, Conn.

* * *

NATIONAL COMMITTEE AND GROUP SESSIONS

2:00 BANKING, INSURANCE,
AND GENERAL OFFICE — BUYERS'
GROUP

Detroit Room

Presiding: Ernest J. Keyser,
Chairman of Group;
Keystone Automobile Club,
Philadelphia, Pa.

* * *

Monday Evening—May 25

P.M.

6:15 HENDRICKS CLUB
ANNUAL DINNER
St. Louis and Foy Rooms

* * *

Visit the
INFORM-A-SHOW
Open Monday Evening
until
9:00 P.M.

* * *

Tuesday Morning—May 26

A.M. BREAKFAST MEETINGS
(Please turn to page 245)

(Continued from page 242)

7:00 N.A.P.A. Executive Committee
Hartford Room

7:00 Los Angeles Convention Committee
Buffalo Room

8:00 National Committee on Steel
St. Louis Room

8:00 NATIONAL DIRECTORS' MEETING

Sierra Room

Presiding: H. W. Christensen, *President*, National Association of Purchasing Agents.

(Not a breakfast meeting.)

NATIONAL PRESIDENT'S REPORT ON ACTIVITIES AND DEVELOPMENTS OF THE YEAR

INTRODUCTION of 1953-1954 N.A.P.A. PRESIDENT

The new president will outline his policy and program.

Tuesday Morning—May 26

GENERAL CONVENTION SESSION

Pacific Ballroom
Hotel Statler

A.M.

9:00 Presiding: Ralph O. Keefer, *General Purchasing Agent*, Aluminum Company of America, Pittsburgh, Pa.
Steel Panel Discussion

Moderator: James T. Morrison, *Chairman*, N.A.P.A. Committee on Steel, *Purchasing Agent*, Baldwin-Lima-Hamilton Corporation, Eddystone Division, Philadelphia, Pa.

Participants: Sales executives from—

Bethlehem Steel Co.
Kaiser Steel Corp.
Republic Steel Corp.

United States Steel Corporation

Question Askers—
N.A.P.A. Committee on Steel

10:30 *Economic Panel Discussion*
Moderator: Heinz Luedicke, *Editor*, Journal of Commerce, New York, N. Y.

Dr. Ray E. Untereiner, California Institute of Technology, Pasadena, Calif.

Neil H. Jacoby, *Dean*, University of California at Los Angeles, Los Angeles, Calif.

David Novick, Chief of Cost Analysis Section, Rand Corporation, Santa Monica, Calif.

Tuesday—May 26

OFFICIAL MEETINGS

A.M.

10:00

to N.A.P.A. Headquarters

12:00

New York Room

P.M.

1:30 CONVENTION ATTENDANCE

N.A.P.A. Headquarters—
New York Room

4:00 RESOLUTIONS COMMITTEE

N.A.P.A. Headquarters—
New York Room

Tuesday Afternoon—May 26

NATIONAL COMMITTEE AND GROUP SESSIONS

Luncheons
Hotel Statler

P.M.

12:15 NATIONAL COMMITTEE ON CONTAINERS

Boston Room

Presiding: Harold R. Morrison, Union Oil Company of California, San Francisco, Calif.

12:15 NATIONAL COMMITTEE ON EDUCATION

Cleveland Room

Presiding: H. F. Jones, *Chairman*, N.A.P.A. Committee on Education; *Purchasing Department*, E. I. du Pont de Nemours & Company, Wilmington, Del.

12:15 NATIONAL COMMITTEE ON NONFERROUS METALS

Presiding: Russell C. Wenz, *Chairman*, N.A.P.A. Committee on Nonferrous Metals; *Purchasing Agent*, Duquesne Light Company, Pittsburgh, Pa.

12:15 NATIONAL COMMITTEE ON PAPER

Hartford Room

Presiding: T. A. Corcoran,

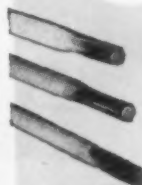
(Please turn to page 248)

P & H

Welding Equipment

**speeds production
schedules, cuts costs**

P & H LOW-HYDROGEN ELECTRODES



13 types for high-strength welds on problem steels, steel castings, nickel-alloy steels, chrome-moly steels, 40 carbon castings, high-hardenable steels, aircraft and similar steels.

P & H POSITIONERS

Position heavy weldments for economical down-hand welding. Complete range of sizes to handle work from 2500 to 36,000 lbs. — remote-control and hand-operated models.



P & H WN-301 Engine-Driven DC ARC WELDER

2- or 4-
Wheel
Mountings



Portable. Equipped with Dial-electric Control, for fingertip heat control at the work — gives you faster, better welding. Runs at only 1750 rpm. Welding service range, 60-375 amps, NEMA rated.

Ask your P & H representative or distributor for complete information, or write for free bulletin.

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GENERAL-PURPOSE CONTROL



Fhp motor starter



1-7 1/2 hp manual motor starters



A-c magnetic motor starter



Combination motor starter



Reversing motor starter



Meet Any Motor-Starting Application With A Dependable G-E Magnetic Starter

Thousands of Forms Available

No matter what your requirements, you can get a G-E starter to fit your application. Hundreds of variations of across-the-line, combination, reversing and multi-speed starters are available for a-c motors.

Every form pictured above has the same basic contactor that has proved its superiority again and again in severe industrial applications. You can choose from literally thousands of combinations of the contactor, shown at the right, and its accessory components, to get the best control for your particular motor application.

EXTRA INTERLOCK CONTACTS—as many as four on sizes 0 and 1, three on sizes 2 and 3—can be added to the standard starter for your application.

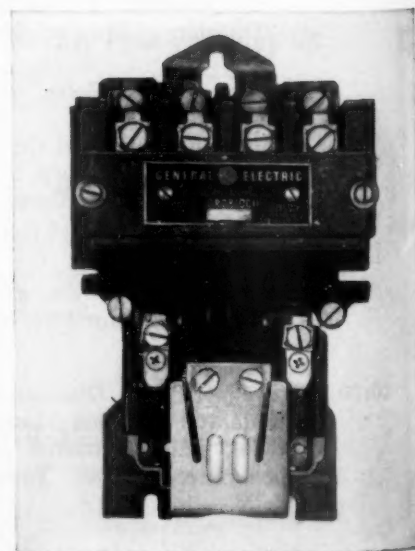
CONTROL TRANSFORMERS for operator protection, extra overload relay for motor protection, and control relays are available as standard components.

EITHER START-STOP push buttons or Hand-Off-Auto selector switches can be mounted in the starter cover.

ENCLOSURES for every motor application include general purpose, watertight, dust-tight, semidust-tight, and explosion-proof. Enclosures that meet JIC specifications are also available.

ALL STARTERS have plenty of wiring space. Contacts, coils and overload relays can be removed quickly, conveniently.

Contact your nearest G-E apparatus sales office or authorized agent or distributor for your starters. Write for Bulletin GEC-880 for more details.





Reduced voltage starter



Heavy and standard-duty push-button stations



General-purpose relay



A-c and d-c solenoids



Roller-lever type limit switch



Rotating-type limit switch



G-E REDUCED-VOLTAGE MAGNETIC STARTER SOLVES POWER PROBLEMS

When load limitations prohibit motor starting at full voltage, this autotransformer-type starter controls and protects the operation of motor-driven pumps, conveyors, compressors, blowers, etc.

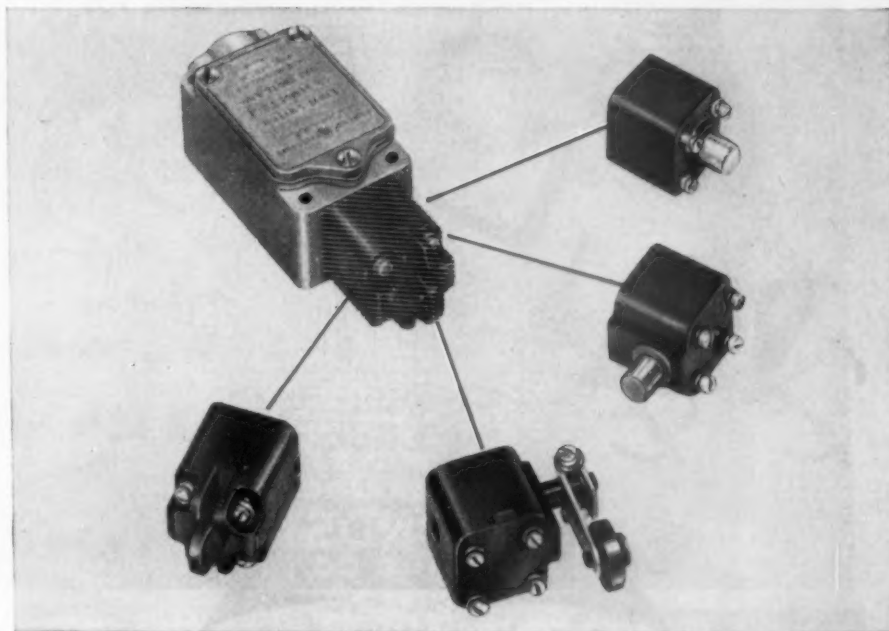
Available in air-break and oil-immersed designs, this hard-working starter for motors up to 250 hp utilizes the most modern materials and methods to give exactly the kind of operation you require for years to come.



NEW OILTIGHT POTENTIOMETER FOR CONTROL OF VARIABLE-SPEED MOTORS

This compact unit is part of the new G-E line of oiltight push buttons for use on a-c or d-c. It can be mounted in the standard G-E stations or enclosures or directly on the machine to be controlled. Ask for Bulletin GEA-5779 on the entire line of G-E oiltight push buttons.

SMALL G-E LIMIT SWITCH HAS FOUR INTERCHANGEABLE OPERATING HEADS FOR VARIETY OF APPLICATIONS



The basic contact unit—only slightly over two inches high—can be obtained with one of four different types of heads: roller lever, side pushrod, top pushrod, and roller pushrod. Case is oiltight—a gasketed cover keeps dirt and lubricating oils away from the contacts.

Little movement is required to operate it—18 degrees with a one-inch radius arm, 5/64 inch for the plunger type. Use this

switch on machine tools, battery truck lift platforms, on small machines as a pilot device, and as a safety interlock on enclosing cases. Operates on a-c or d-c. Double-throw snap-action contact is easily accessible for wiring, and there is adequate room within the cast aluminum case for connecting to terminals, which are extra large. Bulletin GEA-5707.

NEW DUST-TIGHT/LINT-TIGHT G-E MANUAL MOTOR STARTER

For Motors Up to 7½ Hp

Listed by Underwriters' Laboratories and Factory Mutual, this starter for motors up to 7½ horsepower is completely dust tight. Special gaskets and cover fastenings keep dust from contacts—reduce the fire hazard. Two- three- and four-pole forms have bi-metallic overload relays with front-connected heaters. Switch lever moves to neutral position on overload, is vibration resistant.

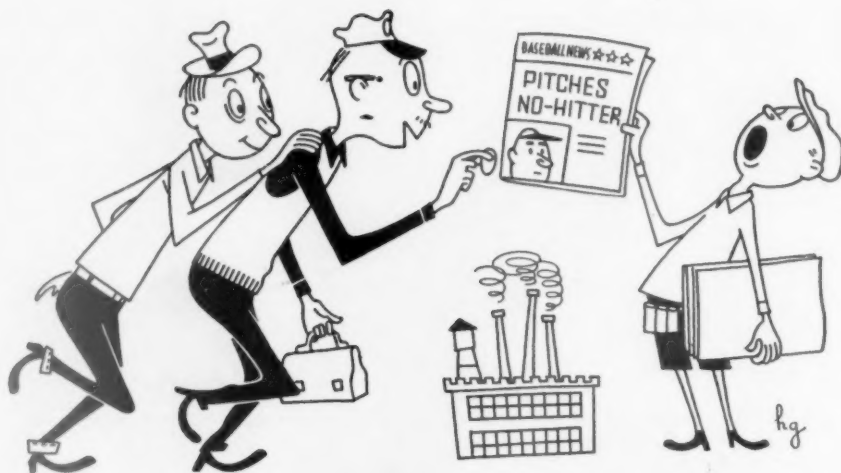
Switch interior can be reversed in the enclosure for either top or bottom feed, and ON-OFF nameplate can be easily reversed.



For more information contact your nearest G-E representative, agent, or distributor, or write Section C730-45, General Electric Co., Schenectady 5, N. Y.

GENERAL  ELECTRIC

*Control gives top results
in grinding too!*



Take Simonds Wheels, for instance! They're quality-controlled for top performance. And this is *complete* quality control. It begins with the raw materials used in the wheels. It continues throughout the screening, mixing, pressing, firing and finishing operations. It governs the minute, but essential variations in the relationship between bonds and cutting particles. It is backed by research and maintained by modern facilities to give you consistently superior results on roughing, finishing, cutting-off, polishing and sharpening. Free data book gives details on complete line. Write for it, and name of your Simonds distributor.



SIMONDS ABRASIVE CO., PHILADELPHIA 37, PA. BRANCH WAREHOUSES: CHICAGO, DETROIT, BOSTON

DISTRIBUTORS IN PRINCIPAL CITIES

Division of Simonds Saw and Steel Co., Fitchburg, Mass. Other Simonds Companies: Simonds Steel Mills, Lockport, N.Y., Simonds Canada Saw Co., Ltd., Montreal, Que. and Simonds Canada Abrasive Co., Ltd., Arvida, Que.

(Continued from page 245)

Chairman, N.A.P.A. Committee on Paper; *Director of Purchasing*, The Courier-Journal . . . The Louisville Times, Louisville, Ky.

12:15 NATIONAL COMMITTEE ON STANDARDIZATION

Detroit Room

Presiding: E. H. Weaver, *Chairman*, N.A.P.A. Committee on Standardization; *Manager of Purchases*, Union Oil Company of California, Los Angeles, Calif.

Tuesday Afternoon—May 26

P.M.

12:15 AIRCRAFT MANUFACTURERS — BUYERS' GROUP

Washington Room

12:15 ELECTRONICS MANUFACTURERS — BUYERS' GROUP

St. Louis and Foy Rooms

Presiding: H. J. Wittemeyer, *Acting Chairman of Group*; Acme Electronics, Inc., Pasadena, Calif. General Discussion.

12:15 WOMEN IN PURCHASING —BUYERS' GROUP

Mission Room

Presiding: Miss Elsie B. Gruber, *Acting Chairman of Group*; *Purchasing Agent*, Bigelow - Sanford Carpet Company, Inc., New York, N. Y.

Tuesday Afternoon—May 26

P.M.

1:30 NONFERROUS METALS FORUM

Pacific Room

Chairman: Russell C. Wenz, *Chairman*, N.A.P.A. Committee on Nonferrous Metals; *Purchasing Agent*, Duquesne Light Company, Pittsburgh, Pa.

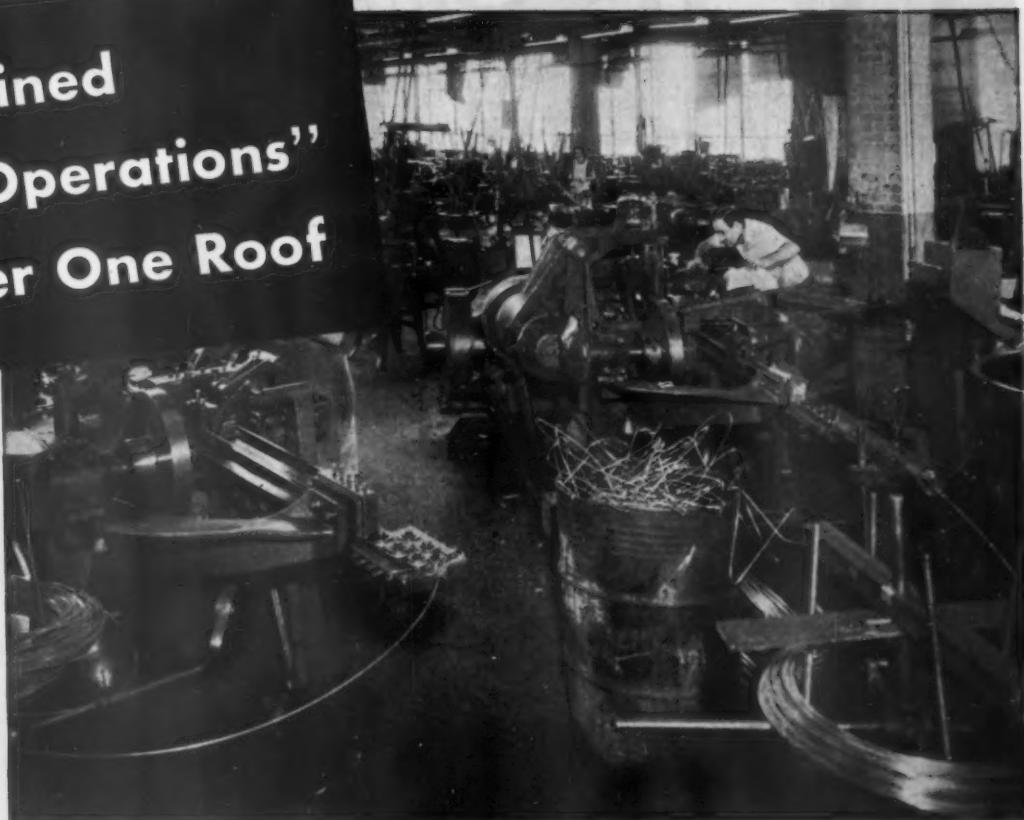
1:30 PAPER FORUM

Woodbury College Auditorium

Chairman: T. A. Corcoran, *Chairman*, N.A.P.A. Committee on Paper; *Director of Purchasing*, The Courier-Journal . . . The Louisville Times, Louisville, Ky.

1:30 OIL COMPANY BUYERS' GROUP

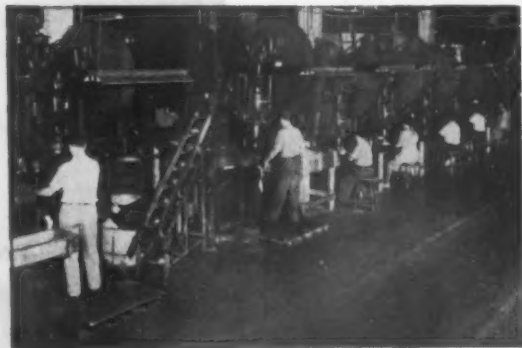
"Combined Operations" Under One Roof



Above: Eastern Tool & Mfg. Co.
Wire Forming Department



Section of press department.



Part of our deep drawing operations.

Eastern Tool & Mfg. Co. combines the essential functions of large quantity metal parts manufacture under one roof.

We are equipped to render our customers a complete service, from design through manufacture and assembly, if required, to final finishing in our completely equipped plating department.

Our wire forming department is the largest of its type in the country, having over 150 automatic four-slide machines, capable of handling almost every variety of round, flat and specially shaped wire in many metals.

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Send for the new 24 page Eastern Tool & Mfg. Co. descriptive booklet.

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**Use Sturdy
CLEVELAND CONTAINERS
for Packaging
IMPORTANT PARTS!**

Our Metal End Telescope Cans and Curled and Disc End Containers are ideal for welding rods . . . cutting tools, such as drills and reamers . . . also gauges and other instruments.

They save time in packing many kinds and quantities of items ready for assembly, even to small items such as bearings and other parts requiring frequent replacement.

Excellent, too, for long-time storage and shipping.

Our V. P. I. (Vapor Phase Inhibitor) and other new type liners are available, affording years of protection from rust and corrosion without the need of coating products with oil, grease or wax.

Ask about Cleveland Containers with special liners.

Our wide experience is at your command.

For the best . . . Call CLEVELAND!

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• All-Fibre Cans • Combination Metal and Paper Cans
• Spirally Wound Tubes and Cores for all Purposes

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SALES OFFICES: Grand Central Terminal Bldg., New York City; Washington Gas Light Bldg., Washington, D. C.; West Hartford, Conn.; Rochester, N. Y.
Cleveland Container Canada, Ltd., Prescott, Ontario • Offices in Toronto and Montreal



Barker Brothers Auditorium
Presiding: A. J. Kelly,
Chairman of Group; Purchasing Agent, Esso Standard Oil Company, New York, N. Y.

2:30 EDUCATION FORUM

Sierra Room
Chairman: Harold F. Jones, *Chairman, N.A.P.A. Committee on Education; Purchasing Department, E. I. du Pont de Nemours & Company, Wilmington, Del.*

3:00 CONTAINERS FORUM

Woodbury College Auditorium
Chairman: Harold R. Morrison, *Union Oil Company California, San Francisco, Calif.*

Tuesday Afternoon—May 26

P.M.

3:00 CHEMICAL AND ALLIED PRODUCTS—BUYERS' GROUP

Detroit Room
Presiding: Glenn H. Reinier, *Chairman of Group; Director of Purchases, Abbott Laboratories, Chicago, Ill.*

3:00 GOVERNMENTAL, EDUCATIONAL AND INSTITUTIONAL BUYERS' GROUP

Washington Room
Presiding: James Clark McGuire, *Chairman of Group; Director, The Port of New York Authority, New York, N. Y.*
Address: "Opportunities in Public Purchasing," Stuart F. Heinritz, *Editor, PURCHASING, New York, N. Y.*

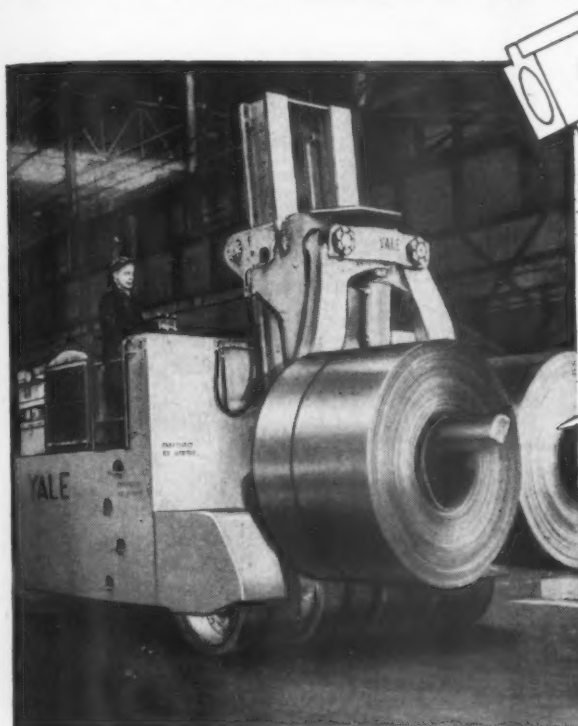
3:30 STANDARDIZATION FORUM

Mission Room
Chairman: V. deP. Goubeau, *Vice Chairman, N.A.P.A. Committee on Standardization; Vice President-Materials, Radio Corporation of America, RCA Victor Division, Camden, N. J.*

(Please turn to page 254)

"Back stage" with Yale

where an industry's quality standards are set



▲ Pictured here is the Giant YALE Ram Truck that lifts and moves loads weighing 100,000 lbs. or more. Like all YALE Trucks, it requires a minimum of maintenance for 'round-the-clock service.

► There's a rugged, dependable YALE Power Truck for every heavy-duty need...from powerful, versatile Tractors and Platform Trucks to massive Cranes like this.



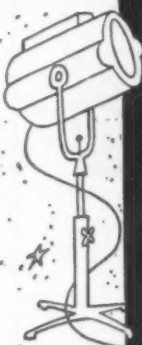
★ You are cordially invited "BACK STAGE" when you're in Philadelphia. Be sure to see the most modern plant devoted exclusively to making the Trucks and Hoists that have entitled YALE to the leading role it plays throughout industry.

See for yourself just how "quality" is built into every YALE Truck...Gas, Electric and Diesel—every YALE Hand and Electric Hoist. Learn how superior engineering, strict quality-control and long manufacturing experience combine to make YALE Materials Handling Equipment the finest that can be bought.



YALE *
MATERIALS
HANDLING EQUIPMENT

*Registered Trade Mark



MAIL
THIS
COUPON
TODAY

The **YALE & TOWNE** Manufacturing Co., Dept. 255

Roosevelt Blvd. & Haldeman Ave., Phila. 15, Pa.

I'm interested in learning more about the time, work and money saving advantages of YALE equipment:

- ☐ Please send me detailed information on YALE Industrial Trucks
- ☐ Please send me detailed information on YALE Hoists
- ☐ Please have your local representative call for an appointment

COMPANY _____

NAME _____

TITLE _____

STREET _____

CITY _____

STATE _____

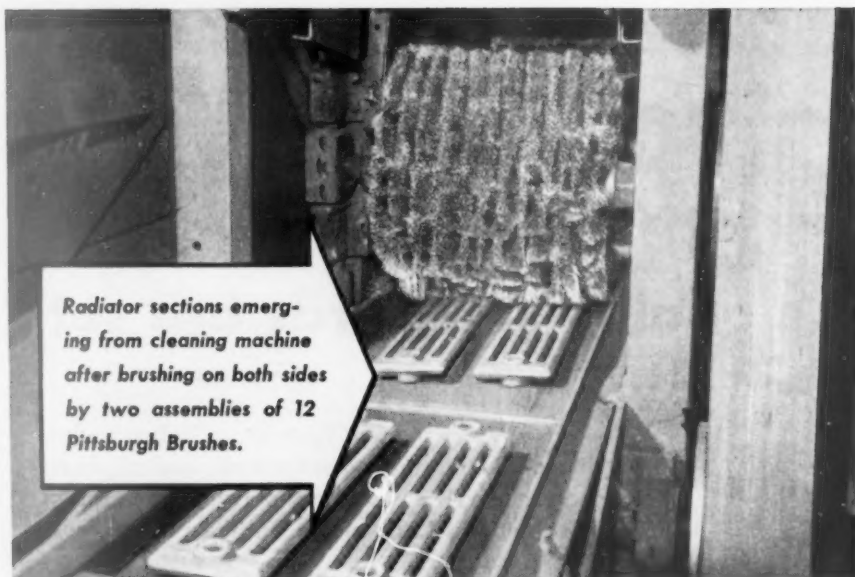
In Canada write: The Yale & Towne Manufacturing Co.,
Box 337, Postal Station "A", Toronto, Ontario.

Gas, Electric, Diesel Lift Trucks • Worksavers • Hand Trucks • Hand and Electric Hoists • Pul-Lifts

MAY, 1953

Please mention **PURCHASING** Magazine when writing to advertisers.

253



Radiator sections emerging from cleaning machine after brushing on both sides by two assemblies of 12 Pittsburgh Brushes.

Pittsburgh Brushes help you solve problems like these—

Cleaning Narrow Spaces—National Radiator Company, Johnstown, Pa., cleans 30,000 radiator sections a week! To insure a perfect final finish, even the narrowest spaces must be absolutely clean prior to assembly. Pittsburgh engineers were presented with the problem of designing a brush that would reach these spaces and would fit National's existing machine. Successful? National reports: Pittsburgh Brushes "do a better job of cleaning and are more economical."

Preparing Chills—At Continental Foundry & Machine Co., East Chicago, Indiana, chills used to cast iron rolls must be cleaned of the oxydized metal remaining from previous usage, as well as dirt and grease accumulated in storage. After experimenting with other brushes, Continental settled on Pittsburgh Brushes because they "do the job better and stand up longer than any others previously used."

Improving Original Equipment—The Sommer and Maca Glass Machinery Co., Chicago, Illinois, uses Pittsburgh Brushes in the automatic washing machines they manufacture. Brushes formerly used simply didn't have the over-all density pattern needed. Pittsburgh engineers studied the problem and designed a brush which Sommer and Maca approved "because of (its) denser bristle pattern and lower cost."

WRITE TODAY FOR FREE BOOKLET!

Write for a free copy of our booklet that shows, through actual case histories, how Pittsburgh can help cut your brushing costs. Address: PITTSBURGH PLATE GLASS COMPANY, Brush Div., Dept. W-2, 3221 Frederick Ave., Baltimore 29, Md.



PITTSBURGH

Power Driven

BRUSHES



BRUSHES • PAINTS • GLASS • CHEMICALS • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

(Continued from page 250)

P.M.

6:30 President's Reception — Dais
Guests
St. Louis and Foy Rooms

ANNUAL BANQUET

Pacific-Sierra Ballrooms
and
Ambassador Hotel

P.M.

7:00 Presiding: H. W. Christensen, President, National Association of Purchasing Agents

Invocation

Presentation of J. Shipman Gold Medal Award
Shipman Award Committee:

Stanley W. MacKenzie, New York, N. Y.—Chairman

Fred G. Syburg, Milwaukee, Wis.

Charles F. Wilson, Dallas, Texas.

Address

"Cobwebs Are Contagious"
John Fisher, Toronto, Ontario, Canada.

* * *

10:00 Purchasing Agents' Association of Los Angeles—Invitation Reception and Dance
Pacific-Sierra Ballrooms

* * *

Wednesday—May 27

GENERAL CONVENTION SESSION

Pacific Ballroom
Hotel Statler

A.M.

Presiding: George W. Aljian, Director of Purchasing and Packaging, California and Hawaiian Sugar Refining Corporation, Ltd., San Francisco, Calif.

9:15 New Products and Materials
Dr. R. H. Ewell, Stanford Research Institute, Stanford, Calif.

10:30 PRACTICAL PURCHASING CLINICS

1. Material Management and Inventory Turnover
Sierra Room

Moderator: E. F. Andrews, Pitman - Moore Company, Indianapolis 7, Ind.

Discussion Leader: Her-



Every one of these drums can save you money!

These drums contain UNOBA! It's the *original* multi-purpose grease. Purchasing agents for leading manufacturing firms depend on UNOBA. They know from experience that UNOBA grease assures minimum operating costs and dependable protection for machines and equipment.

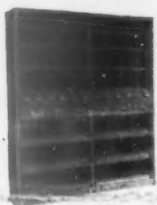
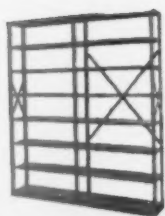
Because of its versatility, UNOBA grease can be used in practically *all* your grease-cup and gun fittings. In some factories, this one grease has replaced as many as seven specialized lubricants. UNOBA protects against rust, prevents excessive wear and prolongs the life of machinery parts.

Multi-purpose UNOBA is a *barium* base grease. This makes UNOBA ideal for many unusual operating conditions because it is able to resist *both* heat and water. UNOBA sticks to metal surfaces at temperatures ranging from below freezing to over 300 degrees F., *regardless of moisture!*

OFFICES: LOS ANGELES: Union Oil Building • NEW YORK: 45 Rockefeller Plaza • CHICAGO: 1612 Bankers Building
CINCINNATI: 2111 Carew Tower Building • NEW ORLEANS: 917 National Bank of Commerce Building

UNION OIL 76 COMPANY OF CALIFORNIA

UNOBA was developed by the makers of T5X—the amazing purple heavy-duty motor oil.



How to save money on steel shelving

DeLuxe shelving costs you less. DeLuxe precision shelving has *fewer parts*, uses *80% less bolts* and is the *only shelving* available that is *100% adjustable*. It's quicker, less costly to install—easier to adjust.

Wherever you are, a DeLuxe factory representative is available to give you a complete engineering, planning and layout service without obligation.

Write for a free catalog now, while your mind is on shelving.



DeLuxe Metal Furniture Co.
309 Struthers St., Warren, Pa.

For over 25 Years Manufacturers of:
Storage Shelving • Library Shelving
Storage Cabinets • Shop Equipment

bert L. Brown, Director of Materials, Pacific Airmotive Corporation, Burbank, Calif.

2. Purchasing Administration

Washington Room
Moderator: R. Park Lam-born, General Purchasing Agent, Kennecott Copper Corporation, New York, N. Y.

Selection, Training and Appraisal of Purchasing Personnel

Discussion Leader: Bruce D. Henderson, General

Manager, Purchases and Traffic, Westinghouse Electric Corporation, Pittsburgh, Pa.

Wednesday—May 27

A.M.

10:30 3. Legal Problems of Purchasing

Mission Room
Moderator: A. W. Soell, General Purchasing Agent, Gaylord Container Corporation, St. Louis, Mo.
Discussion Leaders: Gordon Burt Affleck, Church of Jesus Christ of Latter-Day Saints, Salt Lake City, Utah.

Addison I. West, Cessna Aircraft Company, Wichita, Kansas.

4. Cutting Costs with Value Analysis

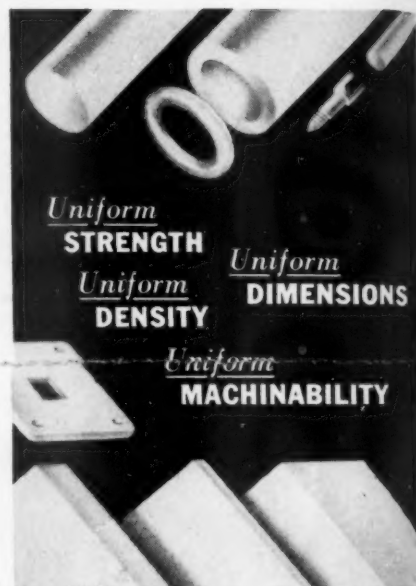
Pacific Room
Moderator: Daniel G. Donovan, Director of Purchases, Pepperell Manufacturing Company, Boston, Mass.
Discussion Leaders: Lawrence D. Miles, Manager, Value Analysis Unit, Materials Service Department, General Electric Co., Schenectady, N. Y.
Russell Wetherell, M & M Woodworking Company, Portland, Oregon.

5. Purchasing Methods and Procedures

St. Louis and Foy Rooms
Moderator: J. Frank Stephenson,

(Please turn to page 260)

How to tell Quality in **TEFLON***



You'll have all these
properties
with **FLUOROFLEX-T***

"Teflon" powder is converted into Fluoroflex-T rod, sheet and tube under rigid control on equipment specially designed to develop optimum inertness and stability in this material. Fluoroflex-T assures the ideal, low loss insulation for uhf and microwave applications . . . components which are impervious to virtually every known chemical . . . and serviceability through temperatures from -110°F to $+500^{\circ}\text{F}$.

Produced in uniform diameters, Fluoroflex-T rods feed properly in automatic screw machines without the costly time and material waste of centerless grinding. Tubes are concentric—permitting easier boring and reaming. Parts are free from internal strain, cracks or porosity.

For maximum quality in Teflon, be sure to specify Fluoroflex-T.

*DuPont trade mark for its tetrafluoroethylene resin

® Resistoflex trade mark for products from fluorocarbon resins

RESISTOFLEX
CORPORATION
Belleville 9, New Jersey



● I-T-E 100-ampere "F" frame circuit breaker in Nema Type 1-A sheet steel enclosure. Three-position operating handle indicates at a glance whether circuit breaker is ON, TRIPPED, or OFF. No specialized personnel required to restore service. *Anyone* can reset circuit breaker to restore service in seconds.



MOLDED CASE CIRCUIT BREAKERS

I-T-E CIRCUIT BREAKER COMPANY • 19TH & HAMILTON STREETS • PHILADELPHIA 30, PA.

SHENANGO*Centrifugal*
CASTINGS

... KEY TO SAVINGS



You'll do better
WITH SHENANGO
CENTRIFUGALLY CAST PARTS

HERE'S WHY . . . Shenango centrifugally cast parts offer many inherent advantages that can help you avoid trouble and save time and money.

For example, due to the centrifugal casting action, you get a more uniform, pressure-dense metal, free from sand inclusions, blow holes and other often-hidden defects. You get higher strength, greater wear resistance, better elongation—longer lasting

parts, better able to withstand severe service of *any* kind.

So if your plans call for symmetrical shapes, anywhere from tiny bushings to huge rolls, ferrous or non-ferrous, rough or finished, check with Shenango. Company after company finds it a good way to do a better job at lower cost.

SHENANGO-PENN MOLD COMPANY

Centrifugal Castings Division
Dover, Ohio

Executive Offices: Pittsburgh, Pa.

SHENANGO

ALL RED BRONZES • MANGANESE BRONZES • ALUMINUM BRONZES
MONEL METAL • NI-RESIST • MEEHANITE® METAL

(Continued from page 256)

Kraft Containers Limited,
Hamilton, Ontario, Canada.

Wednesday—May 27

NATIONAL COMMITTEE AND GROUP SESSIONS Luncheons

A.M.

12:15 NATIONAL COMMITTEE
ON COAL
Washington Room
Presiding: William H.
Gehring, *Chairman*, N.A.
P.A. Committee on Coal;
Purchasing Department,
E. I. du Pont de Nemours
& Company, Wilmington,
Del.

12:15 NATIONAL COMMITTEE
ON FUEL OIL
Hartford Room
Presiding: Millard W.
Merrill, *Chairman*, N.A.
P.A. Committee on Fuel
Oil; *Purchasing Agent*,
United States Metals Re-
fining Co., Carteret, N. J.

2:00 Presiding: G. L. Haszard,
B. C. Electric Company,
Limited, Vancouver, B. C.,
Canada.

FUELS FORUM

Pacific Room

Coal

Chairman: William H.
Gehring, *Chairman*, N.A.
P.A. Committee on Coal;
Purchasing Department,
E. I. du Pont de Nemours
& Company, Wilmington,
Del.

Coal

B. P. Manley, *Manager*,
Utah Coal Operators As-
sociation, Salt Lake City,
Utah.

Fuel Oil

Chairman: Millard W.
Merrill, *Chairman*, N.A.
P.A. Committee on Fuel
Oil; *Purchasing Agent*,
United States Metals Re-
fining Co., Carteret, N. J.

Fuel Oil

Howard R. Cuyler, Stand-
ard Oil Company of Cali-
fornia, San Francisco,
Calif.

Wednesday—May 27

P.M.

1:30 GOVERNMENTAL, EDU-
CATIONAL AND IN-
STITUTIONAL BUY-
ERS' GROUP

THE AMERICAN STORY

CHAPTER EIGHT

The Clue that Clinches

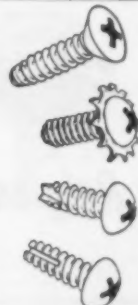
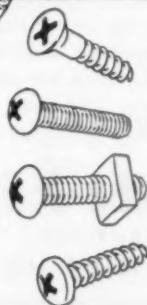
This famous "Clue to Quality" . . . the goodlooking, unscarred head of an American Phillips Recessed-Head Screw . . . is being searched for more, every day, by the quality buyer. Long accepted by leading manufacturers as a guardian *both* of costs and quality, the clean-cut Phillips Recess has also become a national retail buy-sign. It's a readily recognized outward mark of inbuilt quality, underscored by national advertising in leading trade and consumer magazines, including the "Satevepost". Yes, you not only step up your production . . . *you step up your sales as well* . . . when you standardize *all* assemblies on American Phillips Screws.



AMERICAN SCREW COMPANY

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WILLIMANTIC, CONNECTICUT

Main Office & Plant
Willimantic, Connecticut
Office & Plant, Norristown, Pa.
Office & Warehouse, Chicago, Ill.



WASHERS and STAMPINGS

*Geared to Industry's
Production Demands
Since 1887 . . .*



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WROUGHT WASHERS



Over a period of 65 years, producing standard and special washers of all types for all industries, we have made up more than 25,000 sets of dies . . . used in the production of washers which are stocked in thousands of different sizes. On special orders we will make up dies to your specifications.

Let us quote on your requirements for washers and stampings . . . covering fabrication in any material and any finish . . . machined, heat-treated or surface ground, as may be specified.

WROUGHT WASHER MANUFACTURING CO.

The World's Largest Producer of Washers

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Got a moving problem?



Don't let it lick you!



AMERICAN RED BALL Moving Specialists, backed by 33 years' experience, transfer prized possessions Nation-wide, SAFELY, FOR LESS THAN MOST! Consult the yellow pages of your telephone directory. Call your AMERICAN RED BALL Agent for a free personalized estimate.

Rely on AMERICAN RED BALL

TRANSIT COMPANY INC.

PIONEER NATION-WIDE MOVERS

Washington Room
Presiding: James Clark McGuire, *Chairman of Group; Director, The Port of New York Authority, New York, N. Y.*

Round table discussion.

2:00 BANKING, INSURANCE, AND GENERAL OFFICE—BUYERS' GROUP

Detroit Room

Presiding: Ernest J. Keyser, *Chairman of Group; Keystone Automobile Club, Philadelphia, Pa.*

2:00 PULP AND PAPER MANUFACTURERS — BUYERS' GROUP

Mission Room

Presiding: W. D. Jackson, *Chairman of Group; Purchasing Agent, Container Corporation of America, Chicago, Ill.*

Wednesday Afternoon—May 27

GENERAL CONVENTION

SESSION

Sierra Room

P.M.

4.00 N.A.P.A. Official Meeting

Presiding: H. W. Christensen, *President, N.A.P.A.*

Resolutions.

Introduction of 1953-1954

President of N.A.P.A.

Introduction of 1953-1954

Executive Committee.

Announcements.

Closing of Convention.

1 1 1

Canton, Eastern Ohio Association Holds Annual Salesmen's Night

The Canton and Eastern Ohio Association of Purchasing Agents and Sales Executives Club of Canton held a joint dinner meeting at the Elks clubrooms March 18. Seven members of the purchasing agents group held a forum discussion on purchasing and sales techniques. The sales executives group showed a motion picture on the importance of selling.

Those taking part in the discussion were Ronald Archibald of Timken Roller Bearing Company; Don Diamond, Bonnot Company; Cameron Brogden, Diebold, Inc.; John Kiefer, Babcock Printing Press Corporation; George Reeve of Moock Electric Supply Company; Anthony Caruso, General Electric Supply Company, and Paul Young, Timken.

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The first line of reducers
is still the foremost line



Old timers will recall the day—more than 20 years ago—when Taylor Forge announced the first comprehensive line of butt-welding fittings.

Before the WeldELL line was introduced, the only available welding fittings were elbows. But in the WeldELL line came all the fittings needed to do a complete and workmanlike job of pipe welding . . . the tees, reducers, caps, stub ends, and welding flanges.

To produce all of these types of fittings in seamless forged steel was a giant undertaking—and still is. A good example of this is the line of reducers. Today there are 175 reductions in standard weight reducers alone—and this can be multiplied by all the weights and materials in which Taylor Forge reducers are available.

The first line is still the foremost line—the engineered line, the full value line. For up-to-the-minute facts about the WeldELL line, see your Taylor Forge Distributor.

TAYLOR FORGE

TAYLOR FORGE & PIPE WORKS
General Offices & Works • Chicago 90 • P. O. Box 485
Plants at: Carnegie, Pa., Fontana, Calif., Gary, Ind., Hamilton, Ont., Canada



**PERFECTLY
PROPORTIONED**

TO GIVE
Perfect Balance

WIREBOUND BOXES and CRATES
WOODEN BOXES and CRATES
CORRUGATED FIBRE BOXES
BEVERAGE CASES
STARCH TRAYS . . . PALLETS



There quite obviously must be some good reason why **SUPERSTRONG** shipping containers have been among the leaders for nearly one hundred years.

Careful design and manufacture are important factors. Every **SUPERSTRONG** box or crate is proportioned to give the perfect balance of materials which makes for greatest possible protection at lowest possible cost.

We ask that **SUPERSTRONG** be given your consideration when next the question of shipping containers arises.

RATHBORNE, HAIR and RIDGWAY BOX CO.
1440 WEST 21st PLACE • CHICAGO 8, ILLINOIS

Public Utility Buyers Consider "Trends for '53"

(Continued from page 234)

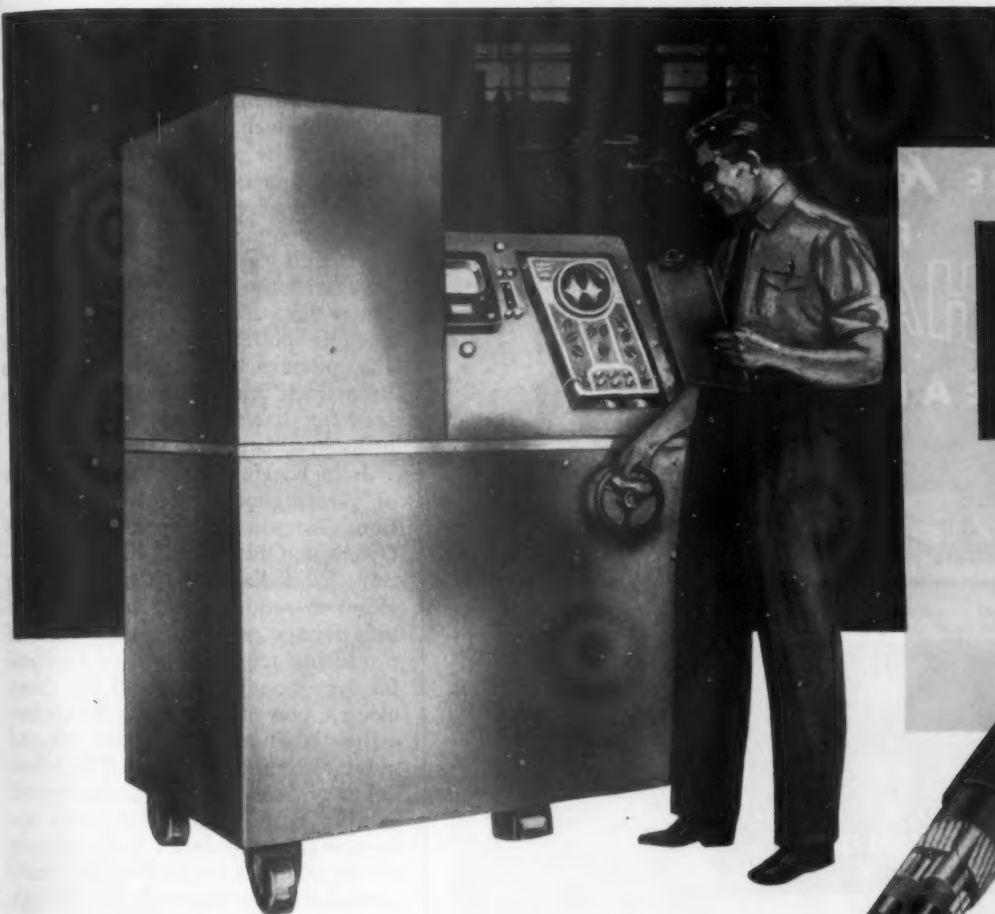
generation, this being the penalty of stresses set up in years of a manipulated economy. There is no single "market price" for copper today, with variations of as much as 3½¢ per pound in the prices quoted by domestic producers. He predicted that this would stabilize around 30¢ in the second half of the year, with Chilean copper continuing at 36½¢ under government control of sales from that country. The Chilean government does not own the mines nor



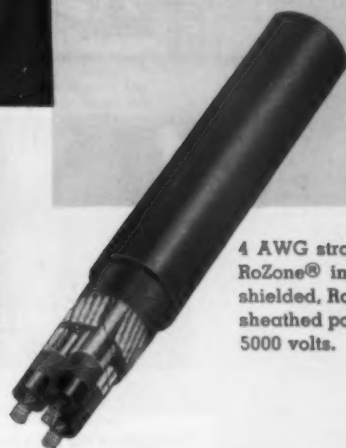
Bob Swanton speaking on business activity and outlook, expressing confidence in new administration.

produce the metal, but buys it from American operating companies at 24½¢ and exports it at the higher, rigidly controlled level. We are currently importing about 45 thousand tons per month, 60% of this from Chile. Other sources will be developed and more scrap reclaimed; meanwhile, we may expect less buying competition from European countries, with fewer American dollars to spend. Dr. Zimmerman noted that aluminum, which was decontrolled on the same day as copper, did not advance in price, and is rapidly boosting production. At 19½¢ per pound, aluminum can compete with 30¢ copper.

R. F. Isenhardt of the Dayton Power & Light Company presided at the afternoon session. He introduced as the first speaker, Robert C. Swanton, Director of Purchases, Winchester Repeating Arms Company, New Haven, Conn., and Chairman of the N.A.P.A. Business Survey Committee. Mr. Swanton reported generally good business conditions, with cautious buying and inventory policies in effect. There is no scare buying, but material



Oscilloscope trace indicates ionisation of this power cable.



4 AWG stranded 3/c RoZone® insulated, shielded, RoPrene sheathed power cable, 5000 volts.

He's *preventing* trouble for you

Perhaps you have had the following experience:

Let's say you bought several thousand feet of electrical cables from a reputable supplier. It passed all the usual physical and electrical tests and conformed to specifications.

Yet it failed prematurely! The reason? Ionization! This cable hazard is caused by the electrical breakdown of air in pockets within the insulation or between the insulation and conductor or shield. And it cannot be detected by usual physical and electrical tests.

But you can be sure of maximum protection against ionization when you buy electrical cables from Rome.

The corona level of every foot of every cable rated at 3000 volts and over is thoroughly tested

by the ionization detecting instrument (pictured above) before that cable leaves the Rome factory.

This testing procedure was developed by Rome engineers as a part of Rome standard manufacturing process. It is the only sure way of detecting ionization and it points up Rome's effort to protect you, the customer, every step of the way and give the type of product and service on which you can depend.

There is a wealth of helpful information on Rome products contained in the Power and Control Cable Catalog. Send for your free copy today. Mail the coupon.

Here's why you can depend on Rome

1. Products are quality controlled from bar to finished wire.
2. Inspection is entirely independent of production or sales.
3. Personal type of customer service.
4. Competent research and engineering assistance.

It Costs Less to Buy the Best



ROME CABLE
Corporation
ROME • NEW YORK
and
TORRANCE • CALIFORNIA

ROME CABLE CORPORATION, Dept. P-5, Rome, N. Y.
Please send me a copy of the Rome Power and Control Cable Catalog.

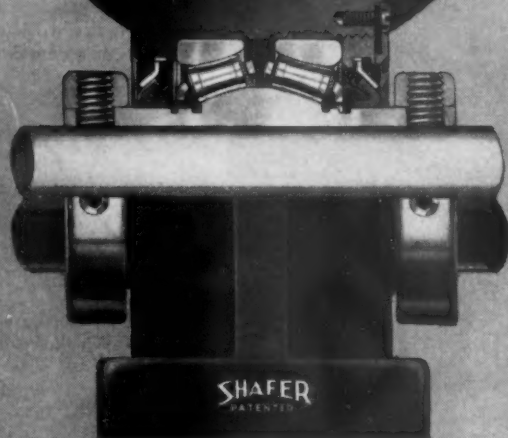
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Company.....

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City..... Zone..... State.....

THE
Rugged JOBS
ARE "Routine"
FOR
SHAFER
BEARINGS



Take-Up
Units



Unmounted
Bearings



Take-Up
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Aircraft Control
Bearings

Throughout the land Shafer Roller Bearings are increasing the nation's productive capacity—carrying big loads, saving money and power, reducing down time and maintenance costs wherever America's heaviest duty power transmission equipment is at work.

Shafer Bearings handle these tough jobs better because they are engineered to-the-job—to provide longer life, greater dependability and lower operating costs under the severest working conditions. Integrally self-aligned, they have full radial-thrust and greater reserve shock load capacities under all conditions of misalignment; are equipped with self-centering "Z" housing seals and Micro-Lock 12-point adjustment. See the Shafer bearing specialist near you . . . or write us direct . . . for complete information and engineering consult on a no-obligation basis. SHAFER BEARING CORPORATION, 801 Burlington Avenue, Downers Grove, Illinois.

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SHAFER



SELF-ALIGNING

ROLLER BEARINGS

INDUSTRIAL • AIRCRAFT



Pillow
Blocks



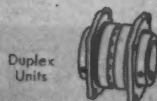
Flange
Units



Flange
Cartridge
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Cartridge
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Duplex
Units

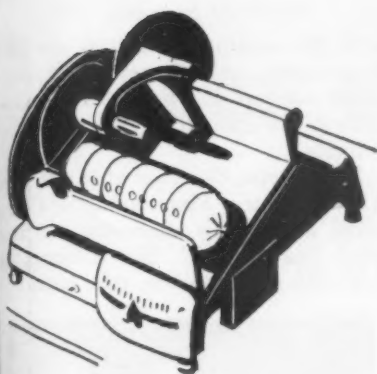
scarcities are definitely a thing of the past and policies are being adjusted to an increasingly competitive situation. Midyear will be the "time of decision". Unfavorable factors are the probability of curtailed defense spending, a recession in foreign markets with the withdrawal of American financial support, and the high national debt. On the brighter side is the general confidence in the new administration and its policies. Brightest spot in the picture is the calibre of our industrial management, which is showing itself to be sound, courageous, realistic, and confident.

John K. Hodnette, Vice President of Westinghouse Electric Corporation, Pittsburgh, spoke on "Our Greatest Obligation." This obligation, he declared, is the continuing effort to reduce costs in the face of inflationary trends, to the end of producing more and better products for less money. The need for cheap electric power can hardly be underestimated in our industrial life and national living standards. The power industry has an impressive record in this respect. Mr. Hodnette reviewed in some detail the programs of the supplier industries that have contributed to this record through research, technical progress, standardization, and manufacturing cost reductions.

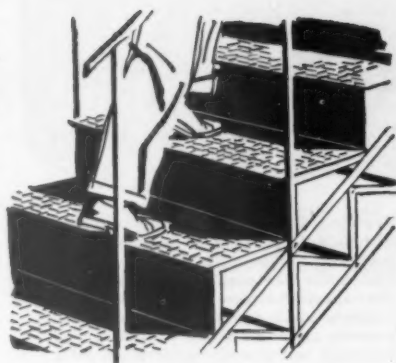
"Cost reduction is not a tidy problem," he said. "There are no single or simple solutions. By its very nature, it is recurring and never can be completely solved. Purchasing people play an important part in cost reduction, not only cooperatively, but in their own right as well. We have found purchasing people well equipped to make large contributions to cost reduction. In the first place, materials and services account for almost half of our sales dollar, and are under the control of our purchasing department. In the second place, purchasing people are likely to be good salesmen of ideas and make good coordinators of cost reduction projects."

A. F. Benson, Vice President of Engineering, American Meter Company, Erie, Pa., spoke on "The Gas Meter—Cash Register of the Industry." He cited a Bureau of Standards report stating that, on the basis of service life and conditions of operation, the gas meter is the most accurate measuring instrument known. Further, he assured his listeners that in the field of large volume measurement, in which Eastern utilities are interested

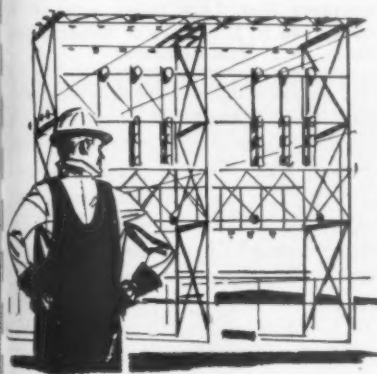
(Please turn to page 272)



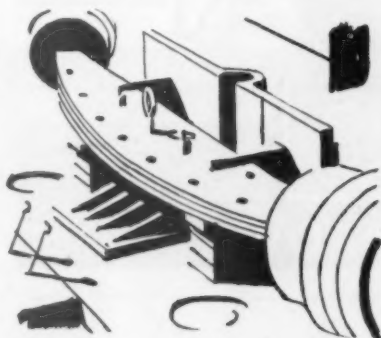
CASTINGS—Aluminum sand and permanent mold castings, like parts for this meat slicer, are strong and sound when Alcoa makes them. They compete in price with castings of any metal when you figure their cost machined, finished and completely assembled.



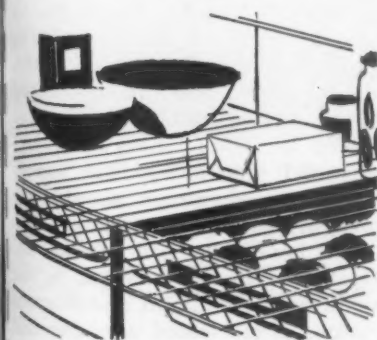
***TREAD PLATE**—Strong Alcoa Aluminum Tread Plate is widely used in refineries and chemical plants because it is nonsparking—in trucks and tractors because it is lightweight.



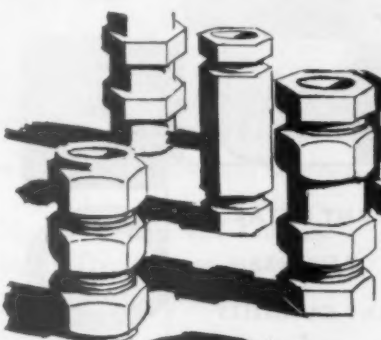
***SUBSTATIONS**—Substations built of lightweight Alcoa Aluminum Structural rolled shapes are quickly fabricated and erected. Aluminum's corrosion resistance eliminates current shutdowns for costly maintenance painting.



***TOOL AND JIG PLATE**—Forming and bending dies for aluminum shapes are economical when made of Alcoa Tool and Jig Plate. It is a cast product. Stress relieved, with close tolerances of flatness and surface smoothness.



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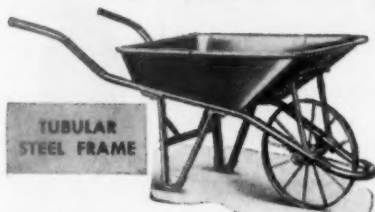
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Model D3 1/2 S Maximum Capacity 3 1/2 cu. ft. 16 gauge tray, all welded, no rivets, double lapped at corners. Steel channel legs. V-shaped front braces and brace support.

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Model CSW Maximum Capacity 5 cu. ft. 16 gauge tray, all welded, no rivets, double lapped at corners. Heavy-duty malleable wheel guard.

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(Continued from page 268)

with the coming of natural gas into these areas, orifice meter measurement used as the basis for pipeline billings are comparably accurate and reliable.

K. R. Geist, Director of Purchases, Allis-Chalmers Manufacturing Company, Milwaukee, discussed "Industrial Purchasing." His address is reported elsewhere in this issue.



Conference host J. J. Morse with W. D. McChee and H. J. Wallace of National Tube Division, U. S. Steel Company.

H. N. Ramsey of the Philadelphia Electric Company presided at the Tuesday morning session. First speaker was Walker Cisler, President of The Detroit Edison Company. Mr. Cisler's discussion of atomic energy progress and problems will appear in next month's issue.

E. L. Shaner, Editor of *Steel*, predicted that demand for steel will keep that industry operating at full capacity throughout the year. "On plates and heavy structurals, you probably will have to fight vigorously for your rightful share well into the fourth quarter," he said. The reassuring fact is that our mass producing and mass consuming economy are far beyond anything previously anticipated.

D. Wilmot, Vice President, Aluminum Company of America, Pittsburgh, predicted that with increasing production, and taking account of the unpredictable government demand for atomic energy development and stockpiling, the supply situation in aluminum should improve in the late months of 1953. Elimination of price controls will not be reflected in any changes in the base price of aluminum, and changes in prices of fabricated products will be limited to those necessary to correct present inequities.

Henry J. Wallace, Vice President—Sales, National Tube Division, U. S. Steel Company, Pittsburgh, reported a 65% postwar increase in pipe and tubing production capacity, as compared with a 31% increase for basic steel capacity. A significant

(Please turn to page 276)

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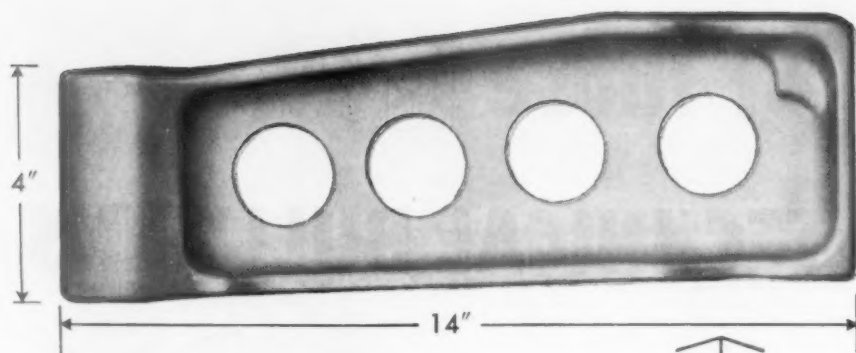
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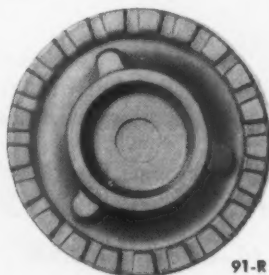


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(Continued from page 272)

cant feature of this increase is the wide geographic distribution of the postwar mills. The real problem in this industry is the controls exercised over distribution of steel to civilian markets. These controls are scheduled to die on June 30. Some unbalance of immediate supply and demand still exists in certain areas. Time and a free market will solve these problems.

J. Donald Hogg of the Cleveland Electric Illuminating Company presided at the closing session on Tuesday afternoon. Speakers at this session included G. Ben Herr of the Petroleum Administration for Defense, Washington, D. C., on "Materials Outlook for 1953"; Stuart F. Heinritz, Editor of *PURCHASING*, New York, on "The Job Ahead for Purchasing"; and C. F. Ogden, Manager of Purchases, The Detroit Edison Company, who presented the buyer's side of the controversial issue of "Progressive Payments" on contracts for major equipment.

Midwinter Meeting to Be Held in Baltimore

R. H. Sperrang of the Union Electric Company of Missouri, St. Louis, on behalf of the Resolutions Committee, expressed the Group's appreciation of all those contributing to the success of the conference. W. H. Jones of the Philadelphia Electric Company was introduced as the new Chairman of the Group. He announced that the midwinter meeting of 1954 will be held in Baltimore.

The recreational side of the conference included a pre-conference dinner sponsored by the "Pittsburgh Group"; the social hour, banquet and entertainment on Monday evening; and a breakfast get-together featuring a skit on three types of salesmanship, authored by Russell C. Wenz of Duquesne Light Company. In addition, the ladies were treated to a luncheon and fashion show in the famous Blue Room of the Roosevelt and a tour of antebellum homes in the Garden District as guests of the New Orleans Public Service, Inc.

The Committee on Arrangements for this highly successful meeting was headed by James J. Morse of New Orleans Public Service, Inc., assisted by L. H. Moss and F. W. Kraemer of his departmental staff and H. M. Warren of Louisiana Power & Light Company. J. R. Carmichael, Georgia Power Company, Atlanta, was in charge of program arrangements.

(Please turn to page 280)

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Made of durable, waterproof Chase burlap Protex, (burlap laminated with asphalt to heavy crinkled paper). Keeps drum and heads completely dry. No leakage because there are NO SEAMS. Draw cord permits cover to be removed and reused.

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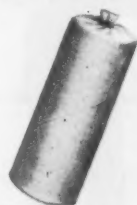
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They're RIGHT on the barrel head! Made of tough Neoprene-treated crinkled kraft. Slip on all sizes of barrels and drums—easily and quickly. Elastic skirt keeps out dirt! Choice of printed or plain.

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Carolinas-Virginia P.A.A. Meets At Williamsburg

The Spring Meeting of the Carolinas-Virginia Purchasing Agents Association was held at the Williamsburg Lodge, Williamsburg, Va., March 13 and 14. This was also the occasion for a meeting of the 8th District Council, the National Directors of District 8 Associations being guests at the banquet meeting on Friday evening.

P. C. Coggeshall of Sonoco Products Co., Hartsville, S. C., presided at the Friday morning business session, at which committee reports were given and eight new members were introduced.

L. B. Whitehouse, Jr., of Morton Mfg. Corp., Lynchburg, Va., presided at the afternoon session. Following a talk on "The Job Ahead for Purchasing", by Stuart F. Heinritz, Editor of PURCHASING, the meeting was given over to a panel discussion of commodity markets. The members of the panel included:

Fuel—H. D. Waters, Mill Power Supply Co., Charlotte, N. C.

Furniture and Lumber—O. L. Jeter, The Lane Co., Altavista, Va.

Mill Supplies—W. H. Easter, Tidewater Supply Co., Norfolk, Va.

Paper and Containers—J. S. Walden, Standard Paper Mfg. Co., Richmond, Va.

Textiles—R. O. Hartman, Riegel Textile Corp., Ware Shoals, S. C.

Utilities—W. G. Thomas, Duke Power Co., Charlotte, N. C.

A lively discussion ensued, particularly on the lumber and container topics, and dealing particularly with the policy of loyalty to suppliers in a period of active price competition. The second portion of the panel was devoted to matters of departmental operation, with the following leaders:

Supplier Relations—J. J. Kloss, Southern Biscuit Co., Richmond, Va.

Purchasing Methods—George Ziegler, General Mills, substituting for S. A. Belcher, Jr., M. Lowenstein & Sons, Inc., Anderson, S. C.

Purchasing Procedures—Miss M. R. Griffin, Norfolk Shipbuilding & Dry Dock Co., Norfolk, Va.

Speaker at the banquet was Dean F. Byers Miller of the School of Business Administration, University of Richmond. This was preceded by a social hour.

On Saturday morning, W. E. Prescott of Kendall Mills, Charlotte, N. C., introduced Gurney W. Grant, Miller & Rhoads, Inc., Richmond, Va., who spoke on "Supplies Pur-

(Please turn to page 284)

Maybe Sandvik can do this Spring Steel trick for you!

Naturally, Sandvik's stock of over 780 spring steel sizes includes many odd ones. The exact size and quality you want may be among them. Why not check with Sandvik?

In fact it makes sense to check with SANDVIK regardless of whether your size requirements are extraordinary or not. If spring steel performance is important to you, there's a good chance you'll find a SANDVIK steel that will suit you to a "T."

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- Precision rolled in thicknesses to fit your requirements.
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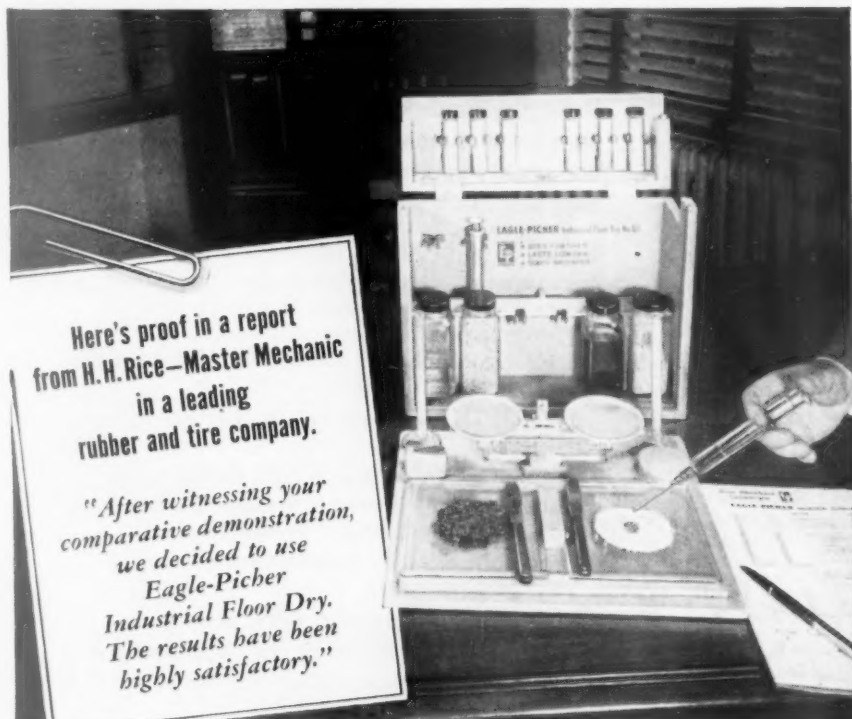
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(Continued from page 280)
chasing"; R. C. Swanton of New Haven, Conn., Chairman of the N.A.P.A. Business Survey Committee, who reviewed the current business situation and outlook; and Dr. Heinz Luedicke, Executive Editor of the New York *Journal of Commerce*, who discussed "The Impact of the New Administration Policies on Business".

Concluding feature of the program was a dramatized presentation entitled "Your Money's Worth", by two members of the staff of the Federal Reserve Bank of Richmond—Dr. George W. McKinney, Jr., Financial Economist, and Robert R. Fentress of the Public Relations Department. They graphically portrayed the various factors affecting the value and purchasing power of the dollar, and the workings of inflation. A. J. Dickinson, Chairman of the Educational Committee, presided.

At the District Council meeting, considerable attention was given to plans for the District Conference to be held at Buffalo in October. G. W. Howard Ahl of Philip Morris, Ltd., New York, was elected to serve as District Vice President for 1953-1954, succeeding J. M. Austin of Oneida, Ltd., Oneida, N. Y.

Montreal Association Members Go On Two-Day Plant Visit

Members of the Purchasing Agents Association of Montreal went on a two-day out-of-town plant visit April 17 and 18. The party left Sherbrooke on the morning of the first day and travelled by buses to Asbestos, where one half visited the mines and the other half visited the products division of the Canadian Johns-Manville Company, Ltd. The schedule was reversed in the afternoon.

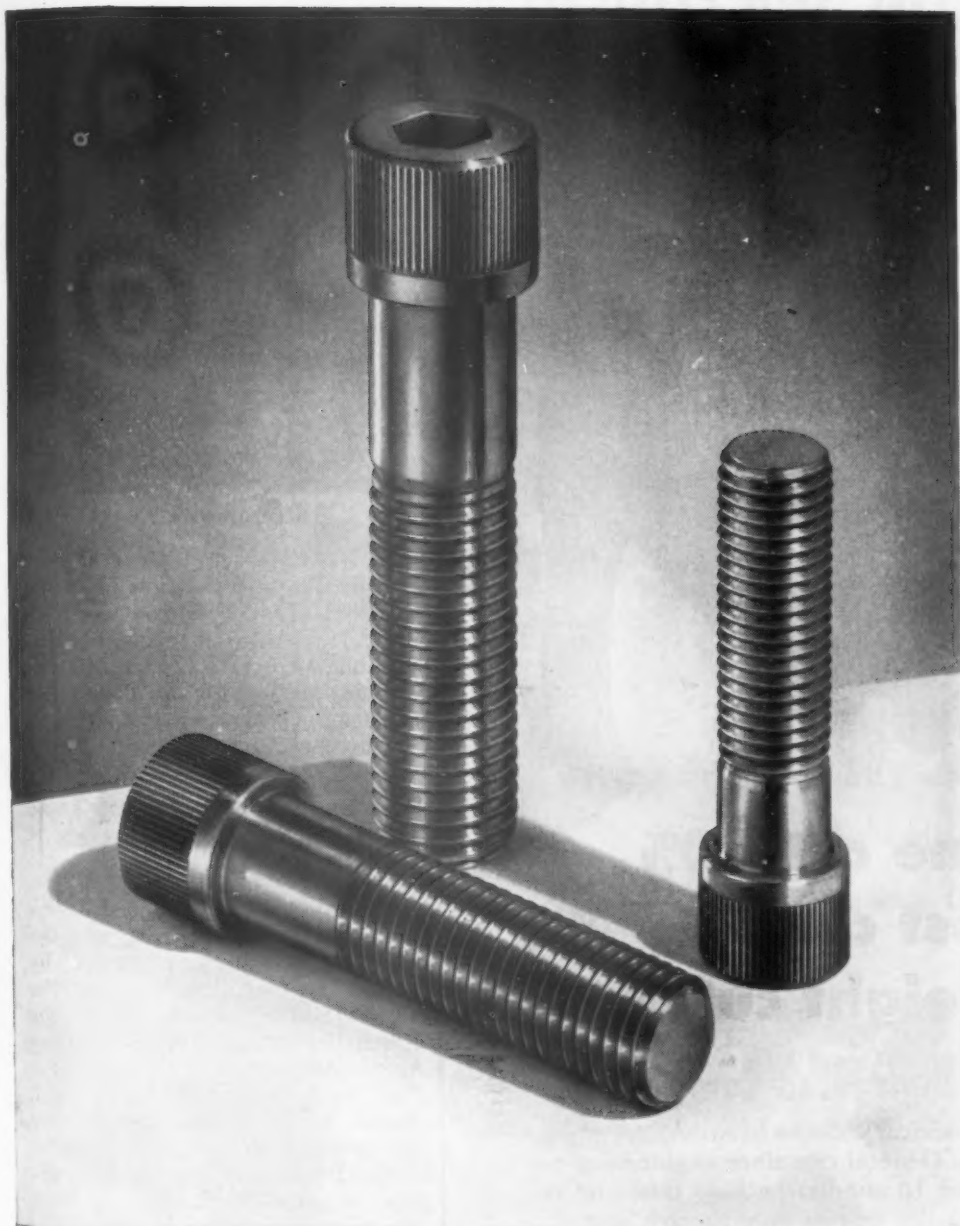
An association dinner meeting was held in the evening at the New Sherbrooke Hotel, with invited guests from the plants attending.

The following morning the party visited the plants of the Canadian Ingersoll-Rand Company, Ltd., and the Carnation Milk Company, Ltd.

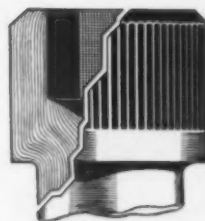
At its March 17 meeting in the Sheraton-Mount Royal Hotel, the association heard the Honorable Lionel Chevrier speak on the latest developments on the St. Lawrence Seaway.

The nominating committee will present its slate of officers for the new year at the regular May meeting. Hugh P. Millar is chairman, assisted by Charles Firminger and Harry Caplan.

(Please turn to page 288)

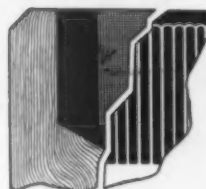


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A START FOR THE FUTURE

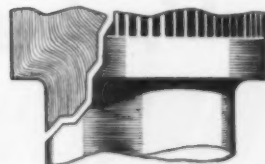


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FILLET. Completely formed to provide maximum resistance to shear and continuous grain flow throughout length of screw.

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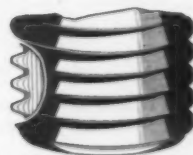
If you did, and it's an UNBRAKO, you'd marvel at the knurled head, the uniform hex socket, the smooth shank, the precision threads, all combined to make a strong, close tolerance fastener.

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G. W. Howard Ahl Elected Vice President of N.A.P.A.



G. W. Howard Ahl

G. W. Howard Ahl, General Purchasing Agent for Philip Morris & Company, Ltd., has been elected a vice president of the National Association of Purchasing Agents. He is a past president of the Purchasing Agents Association of New York.

1 1 1

Purchasing and Production Topic Of Robert E. Gay's Speech Before Dayton Association

"Purchasing and Production Control Come Into Their Own," was the topic of a speech presented by Robert E. Gay, president of the Bristol Brass Corporation, at the March 12 meeting of the Purchasing Agents Association of Dayton, Ohio. The topic was particularly well chosen because this meeting was the seventh annual joint meeting of the Purchasing Agents Association and the Production Control Managers Association of Dayton.

Mr. Gay painted an optimistic picture of the brass industry for this year, basing his views on the highly competitive market and the ample supply of brass. Pointing to the market fluctuations of copper, a chief alloy of brass, he predicted a "simmering down" in the near future. He also emphasized the importance attached to production control and scheduling and the co-operation of production men and purchasing agents.

The Dayton Y.M.C.A. mixed chorus entertained those attending the meeting with several song renditions.

Louis A. Cummins, president of the Production Control Association, addressed the group.

The Dayton Association will visit the Cincinnati Milling and Grinding Machine Company plant at Cincinnati, Ohio on May 14.

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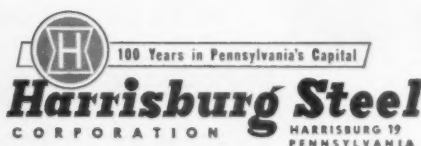
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SEE PAGE 352

Governmental Buyers Meet In Kenosha

The quarterly meeting of the Wisconsin Chapter, National Institute of Governmental Purchasing, was held at the city hall in Kenosha, March 13th.

City P. A. Joseph Nicholson of Milwaukee addressed the meeting, stressing the point that purchasing agents, like other public officials, should see to it that newcomers to a community should be told about the advantages and facilities the city has to offer. He mentioned the annual report of his department, which is made available to all and gives a good picture of municipal activities. He reported that ground has been broken for a new municipal warehouse. With the completion of this facility, practically all of the city's supplies, now carried in some 35 scattered storehouses, can be kept under one roof. He also discussed the cost of interviewing salesmen, which has tripled within the past few years according to his studies.

Art Hopcraft Dies

Arthur G. Hopcraft, a past president of the National Association of Purchasing Agents (1924-25) and long one of its most active members, died suddenly in Cleveland on April 22. At the time of his death he was Purchasing Agent for the Cleveland Worm & Gear Co. and The Farval Corporation, Cleveland. He was at one time Commissioner of Purchases for the City of Cleveland. A man of kindly nature and genial wit, Art was extremely popular throughout the association, and was sought after as a speaker at various meetings.

Columbus Association Honors Its Past Presidents At Dinner

Past presidents of the Columbus Association of Purchasing Agents were honored at the regular monthly dinner meeting held March 10 in the Grandview Inn.

First, in point of service, was N. O. Aeby, formerly with Jeffrey Mfg. Company, who was president of the group in 1912. He is now with Johns Manville Corporation in Milwaukee.

Other past presidents include R. M. Royer, Ohio State University; Mark H. Swisher, Borden Dairy and Ice Cream Company; Ralph N. Betts, American Education Press; Ollie F. Oelgoetz, F. J. Heer Printing Company, and Gilbert R. Miller, Ohio Fuel Gas Company.



WIRE ROPE, too, resists attack with the RIGHT KIND of muscle

Brawny chest and shoulder muscles make the gorilla a formidable foe in the eternal warfare of the jungle. Defending himself and his family, this 450-pound heavyweight stands erect and fights back with sledgehammer blows of his mighty forearms.

In wire rope, too, it takes the right kind of muscle to resist constant attack of abrasion, corrosion,

bending fatigue, load strain and shock stress.

Complete quality control of Wickwire Rope means that you can always count on the right grade of steel and size of wire; the right construction and lay of the rope for best results on your particular job.

See your Wickwire Rope distributor or contact our nearest sales office.



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PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

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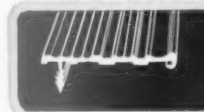
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If your production requirements call for a specially-designed aluminum extrusion, the skill and experience of PE design engineers and production men are available to you to help answer your specific needs. Or, it may be that a solution to your requirements can be found among the 4000 standard rods, bars, shapes, and tubing currently cataloged by Precision Extrusions and available without additional die service charge.

PERSONALIZED SERVICE and specialization in aluminum extruding assures you of prompt handling of your inquiry, careful production supervision, and extrusion quality meeting the highest standards of the industry.

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Hartford County Association Honors C. V. Chapin At Testimonial Dinner

C. V. Chapin, Purchasing Agent of The Bristol Brass Corporation, Bristol Conn., was honored at a testimonial dinner by the members of the Hartford County Purchasing Agents Association for his 23 years as treasurer of the association.

Approximately 175 members and guests attended the affair at the Tumblebrook Country Club in Simsbury.

A motion picture camera and projector were presented to Mr. Chapin by the men who served with him: the eight past presidents of the Association, Edward McDonough, Fred Barrett, Arthur Sage, Dominic McNulty, Edward Flannery, Frank Schoen, Edward Field and Willard Starkie. They were assisted by John Sullivan, current president.

Among those who lauded Mr. Chapin were Mayor Daniel J. Donovan of Bristol; Robert E. Gay, president of Bristol Brass, and Joseph O'Brien, vice president and general superintendent of Bristol Brass.

Edwin McDonough was master of ceremonies.

Mr. Chapin joined the Association in 1927 and became its treasurer three years later. He is a past director of the Purchasing Agents Association of Connecticut, and has attended every meeting of the National Association of Purchasing Agents since 1927.

He went to work for Bristol Brass 37 years ago in its bookkeeping department. He became Purchasing Agent 10 years later and has served in that capacity since.

Judge Kessinger Speaks At Buffalo P.A.-Salesmen's Annual Meeting

Judge Harold C. Kessinger spoke on "The World's Greatest Adventure" at the annual joint meeting of the Purchasing Agents Association of Buffalo and the salesmen's group, April 8 in the Hotel Statler.

Cocktails were served at 6 p.m., followed by dinner at 7 p.m.

The evening's entertainment included amateur boxing events sanctioned by the AAU. The bouts were held in a regulation size ring and refereed by qualified officials.

Additional Association News
Appears on Page 482



FOR CLEANER CASTINGS DEVIL'S PUTTY

DEVIL'S PUTTY is a new graphite impregnated plastic refractory for: steel and gray iron ladle linings; making up spouts and runners; linings for ferrous and non-ferrous metal melting furnaces and similar applications.

DEVIL'S PUTTY reduces refractory inclusions, thus producing cleaner castings; withstands severe thermal shock without "sluffing off"; contains chemically treated graphite that will not burn out of the mix, which aids surface lubrication and permits cleaner and faster pours. Molten metal has no sticking tendency to DEVIL'S PUTTY lining, so slag rises quickly to top for easy skimming.

Write for useful literature and the name of your nearest Botfield Distributor.

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Every organization should keep on hand this big 52-page catalog, illustrating over 150 suggestions for handsome, imperishable, solid bronze plaques. Sent free — ask for Catalog A. Write Dept. 34.

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Special catalog illustrates 900 cups, trophies, medals, etc. suitable for presentation as prizes and awards in all kinds of contests, or for testimonial purposes. Sent free — ask for Catalog B.



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Personalities



IN THE NEWS

Stanley T. Johnson has been appointed Purchasing Agent, non-ferrous metals, U. S. Steel Corporation, Pittsburgh, Pa., succeeding the late Anthony Siragusa.



Stanley T. Johnson

Mr. Johnson formerly had been located in U. S. Steel's Washington, D. C. office.

A native of Arlington, Mass., Mr. Johnson was graduated from the Massachusetts Institute of Technology with a B.S. degree in metallurgy. He also attended Carnegie Institute of Technology. In 1936 he joined U. S. Steel's metallurgical department and later was transferred to the production planning department.

In 1943 Mr. Johnson joined the U. S. Navy, and was discharged in 1946 with the rank of lieutenant. After returning from the service, he was named staff assistant in the production planning department. Later that year, he was transferred to United States Steel Export Company, being stationed first in the New York office and then as sales engineer in Gothenburg, Sweden and Brussels, Belgium.

In March, 1951, Mr. Johnson returned to the United States as special assistant to vice president, Purchases, United States Steel, with headquarters in Washington.

Mr. Johnson is an active member of the American Society for Metals.

M. Curtis Saunders has been named Purchasing Agent and Traffic Manager of the Johns-Manville plant at Jarratt, Va., succeeding W. R. Carey, who has been promoted to the company's general purchasing headquarters in New York City.

Mr. Saunders is a graduate of Crew High School and attended Smithdeal-Massey Business School in Richmond, Va. He started with the company in the shipping department in July, 1939, and in March, 1947, was promoted to the purchasing department, to serve in the capacity of Buyer. He held this position until his recent promotion.

D. A. Maxheimer, former Purchasing Agent of the F. E. Myers & Bro. Company, Ashland, Ohio, has been appointed production control manager. **Guy D. Morr**, former Purchasing Agent, has been appointed Chief Purchasing Agent, and **Ralph B. Reed** and **Kenneth V. Semple**, formerly buyers, have been named Assistant Purchasing Agents.

Mr. Maxheimer joined Myers in 1929 and was transferred to purchasing in 1945.

William L. Vaughn has been appointed Purchasing Agent for Air Conditioning Division of Remington Corporation, Auburn, N. Y. He will supervise procurement of all materials, productive and non-productive, required in the manufacture of console and window-type room air conditioners, dehumidifying equipment and military air conditioning specialties.

A member of the National Association of Purchasing Agents, Mr. Vaughn was previously a Buyer for the Eclipse Machine Division of Bendix Aviation Corporation, Elmira, N. Y. He has been with Bendix a total of 13 years.

Since 1926 when he joined Myers, Mr. Morr has been in advertising, order and purchasing. He served as Assistant Purchasing Agent since 1946.

Mr. Reed has been with Myers since 1934, and has had experience in several departments. He joined purchasing in 1943 and two years later was named Buyer.

Mr. Semple joined the company in 1947 and was transferred to purchasing in 1951.



New appointees at The F. E. Myers & Bro. Company, Ashland, Ohio, are, left to right: Kenneth V. Semple, Assistant Purchasing Agent; Guy D. Morr, Chief Purchasing Agent; Ralph B. Reed, Assistant Purchasing Agent, and D. A. Maxheimer, former Purchasing Agent, now Production Control Manager.

"TOM: —

**IN THE FIRST YEAR AFTER WE
CHANGED OUR PLANT TO FUSETRON
FUSES, WE ENTIRELY ELIMINATED MOTOR
BURNOUTS FROM SINGLE PHASING AND
REDUCED ALL MOTOR BURNOUT BY AT
LEAST 75% "**

(Excerpt from a conversation of
Forrest Baumgardner with Tom Wier)



FORREST BAUMGARDNER, *Chief Electrician,*
Frank Wheatley Pump & Valve Mfr.
Tulsa, Oklahoma.

"FOREST:—

DON'T FORGET FUSETRON FUSES

DO MORE THAN PROTECT MOTORS

— THEY PROVIDE 10 POINT PROTECTION!"

- 1 Protect against short-circuits.*
- 2 Protect against needless blows caused by harmless overloads.
- 3 Protect against needless blows caused by excessive heating — lesser resistance results in much cooler operation.
- 4 Provide thermal protection — for panels and switches against damage from heating due to poor contact.
- 5 Protect motors against burnout from overloading.
- 6 Protect motors against burnout due to single phasing.
- 7 Give DOUBLE burnout protection to large motors — without extra cost.
- 8 Make protection of small motors simple and inexpensive.
- 9 Protect against waste of space and money — permit use of proper size switches and panels.
- 10 Protect coils, transformers and solenoids against burnout.

* Fusetron Fuses have high interrupting capacity as shown by tests of the Electrical Testing Laboratories of New York.

Here's why FUSETRON Fuses give All Purpose protection...

A fuse link combined with a thermal cutout — the result, a fuse with tremendous time-lag and much less electrical resistance.

They have the same degree of Underwriters Laboratories approval for both motor-running and circuit protection as the most expensive devices made.

Made to same dimensions as ordinary fuses, FUSETRON FUSES fit all standard fuse holders.

Obtainable in all sizes from 1/10 to 600 ampere, both 250 and 600 volt types. Also in plug types for 125 volt circuits.

Their cost is surprisingly low.

FUSETRON is a trade mark of the Bussmann Mfg. Co.



TOM WIER,
BUSS Fuseman,
covering Tulsa, Okla.

Don't Risk Losses!

- One lost motor . . .
- One needless shutdown . . .
- One destroyed switch or panel
- One burned out solenoid . . .

May cost you far more than replacing every ordinary fuse with a Fusetron dual-element Fuse.

Bussmann Mfg. Co., University at Jefferson,
St. Louis 7, Mo. (Division of McGraw Electric Co.)

Please send me complete facts about FUSETRON dual-element Fuses.

Name _____

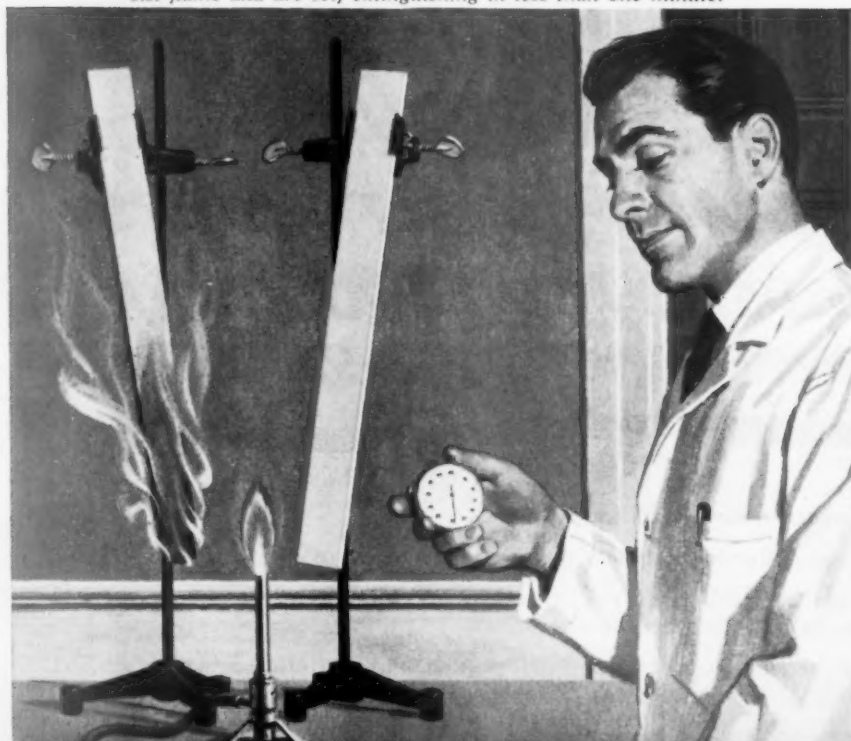
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By actual stop-watch test, G-E fire-resistant laminates resist flame and are self-extinguishing in less than one minute.



LOOKING FOR A HIGH-GRADE FIRE-RESISTANT LAMINATE?

G-E 11542 and 11537 retain characteristics even when subjected to high heat and flame

The new G-E Textolite* 11542, for electronics applications, and 11537, for switchgear applications, are paper-base industrial laminates. They have a low dielectric loss and offer you *all* of these remarkable characteristics:

FIRE RESISTANCE. They withstand extreme heat, and are self-extinguishing within one minute or less when subjected to actual flame.

EXCELLENT ELECTRICAL PROPERTIES. G-E 11542 and 11537 retain their electrical properties at temperatures as high as 125 centigrade.

HIGH RESISTANCE TO MOISTURE. They have a low moisture absorbing factor, and do not break down under extremely humid conditions.

DESIRABLE MECHANICAL PROPERTIES. G-E 11542 and 11537 have great strength, yet are easy to machine with ordinary tools, and have good punchability in sheets up to 1/8-inch thick.

You can count on G-E 11542 and 11537 for durability and long wear—to help keep maintenance costs low. Available in sheets from .015 to 2.0 inches thick, as well as in tubes and rods.

FOR FURTHER INFORMATION,

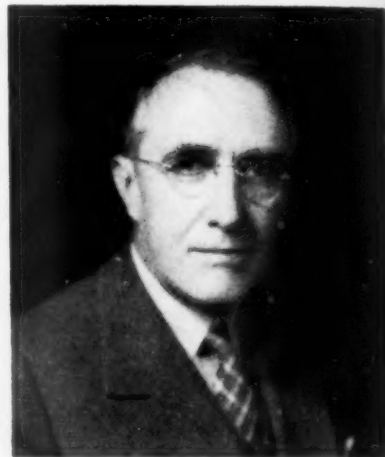
write: General Electric Company, Section
327-2A, Chemical Division, Pittsfield, Mass.

You can put your confidence in—

GENERAL  ELECTRIC

Richard S. Reade has been appointed Director of Purchases of American Radiator & Standard Sanitary Corporation, Pittsburgh, Pa. Prior to his appointment, Mr. Reade was in charge of purchases for American Blower Corporation, Detroit, Mich., a subsidiary of American-Standard.

Fred G. Space has retired as Purchasing Agent for the Seymour Manufacturing Company, Seymour, Conn., after 32 years' service with the company. For many years Mr. Space also handled the purchases for the Phosphor



Fred G. Space

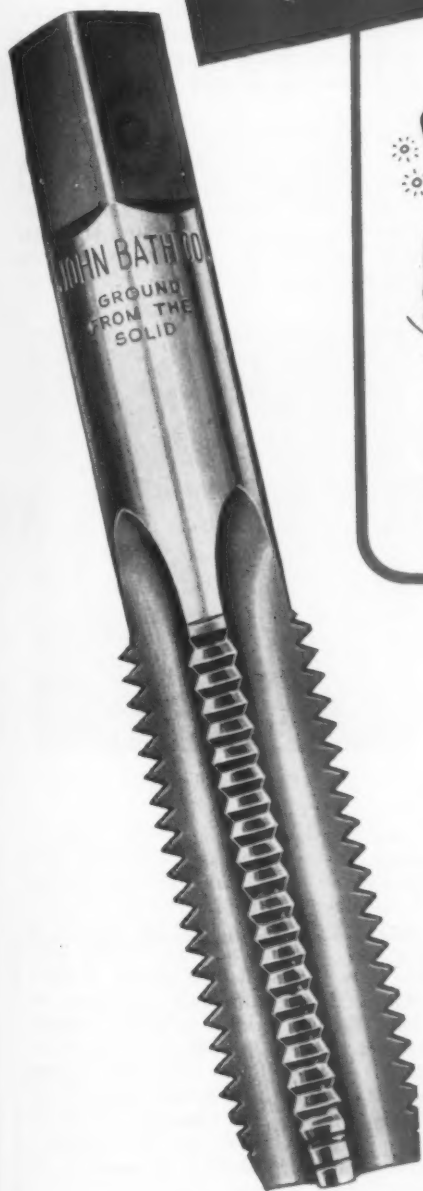
Bronze Corporation, The H. A. Matthews Manufacturing Company, Rufert Chemical Company, and American Refractories & Crucible Corporation. Prior to joining Seymour he had for a number of years been the Purchasing Agent for The General Ordnance Company, Derby, Conn.

William O. Bennett, formerly Assistant Purchasing Agent for Talon, Inc., Meadville, Pa., succeeds Mr. Space. Mr. Bennett attended Amherst College and is a graduate of the University of North Carolina. He joined Seymour in April, 1952.

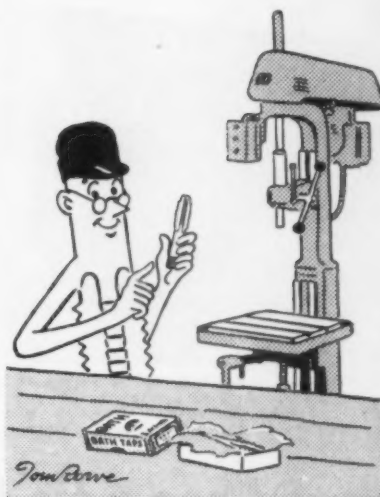
Mr. Space is a past president of the Connecticut Purchasing Agents' Association and a past vice president of the National Association of Purchasing Agents. He has long been active in civic work and was a past president of the Chamber of Commerce, the Housatonic Council, B.S.A., and a recipient of the Silver Beaver award from that organization. He has been chairman of the local School Board, Board of Assessors, and a director for many years of the Ansonia, Conn. Y.M.C.A. As a young man he was assistant educational director of the 23rd Street Y.M.C.A. in New York City.

W. M. Hoag has been named General Purchasing Agent for the Ford Motor Company's plant in Livonia, Mich. He started with Lincoln in 1922 and has been supervising the buying of parts and materials for the tank division.

TAP-ODDITIES



On a windy day, Production Pete
Is always making "checks" —
On the contour of a pair of shanks
Without the aid of "specs".



And when it comes to a production run
Where "specs" must play no pranks,
Pete picks Bath Taps for contour —
Admires their perfect shanks.

The manufacture of Bath "ground from the solid" Taps, has been perfected to take advantage of the latest technical methods, equipment and quality control — producing working tools of uniform structure and in perfect concentricity for precision threading. This means everything must be in line — even to the shank.

Flute contour is important, too. At the Bath plant, flutes are ground on centers in perfect alignment — and, after polishing, assure a refined cutting edge — all the way to the crests of the teeth. Getting full cutting benefit means better threads — especially when you know everything is centered with the axis of the tap.

For "true" value — "in line" with long wear — insist on BATH TAPS for BETTER THREADS.

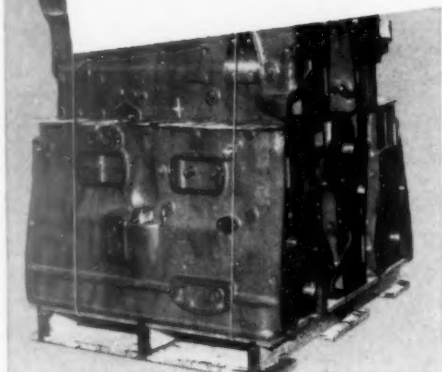


INSIST ON BATH TAPS
— PROFIT BY THEIR
PLUS—PERFORMANCE

PLUG AND RING THREAD GAGES • GROUND THREAD TAPS • INTERNAL MICROMETERS

JOHN BATH CO. INCORPORATED
30 Grafton St., Worcester, Mass.

Want to tie a light package?
...or a heavy pallet?



5 DIESEL ENGINE CRANKCASES—total weight 3800 lbs.—are securely palletized for interplant movement with 2 Gerrard Steel Straps. (Photo courtesy International Harvester Company, Industrial Power Division.)



THE GERRARD B.S.M. TWINE SEALING machine will wrap bundles up to 14" in width and 9" in height.

Gerrard has a tie for every bundle!

• Whether you are wrapping small packages or huge palletized loads, Gerrard has the answer to your tying problem. The Gerrard B.S.M. Twine Sealing Machine for lighter bundles is automatic and easy to operate . . . place the package in the tying area, step on the pedal, and in three seconds the twine is wrapped around the bundle, drawn to a pre-set tension, securely fastened with a *non-slip* metal seal, and cut. The seal is pilfer proof . . . the bundle is locked closed until the twine is cut. And since it can make 30 seals a minute and consumes far less twine than is used in hand tying, the Gerrard B.S.M. Twine Sealing Machine is a real money saver. It may be just what you need in your mailing and shipping department to save you time and money while doing a better tying job.

For the heavy tying jobs, you'll need a strong, safe strap, one that will keep any bundle tight and intact from plant to destination. Gerrard Round Steel Strapping in 8 to 18½ gauge was designed for the strapping of small packages, large cartons or crates, heavy cases, pallets, steel sheets, pipe and machinery. Gerrard Round Steel Strapping costs about 40% less than any other metal reinforcement. With Gerrard's hand-operated machines, or the semi-automatic Model Q, the strapping can be firmly secured for the longest and most rigorous shipments.

Send for free copy
of **BLUE BOOK
of PACKAGING
and
B.S.M. FOLDER.**



GERRARD STEEL STRAPPING DIVISION, UNITED STATES STEEL CORPORATION
4713 South Richmond St., Chicago 32, Ill.



GERRARD STEEL STRAPPING

UNITED STATES STEEL

Elmer T. Meyer, formerly Purchasing Agent and Director of Traffic for the B. F. Avery Division of Minneapolis-Moline Company, Louisville, Ky., has been named assistant manager of the agricultural division of Crucible Steel Company of America, New York City. His office will be in the Henry W. Oliver Building, Pittsburgh, Pa.

Previously Mr. Meyer was employed in the Naval Ordnance plant of Westinghouse Electric Company. Active in trade association work, Mr. Meyer recently was president of the Louisville Association of Purchasing Agents, and a director of the National Association of Purchasing Agents.

Glenn H. Reinier, General Purchasing Agent of Abbott Laboratories, North Chicago, Ill., has been named head of the company's purchasing department, succeeding **Edmund L. Drach** who has retired after 50 years with the company.



Glenn H. Reinier

Mr. Reinier has been with Abbott 26 years, having started as a chemist after graduation from Lake Forest College. A member of the purchasing department for 18 years, he has served as General Purchasing Agent since 1951. His new title will be Director of Purchases. He was appointed last year to the Illinois State Advisory Board named to study methods and procedures of the Illinois State Purchasing Office. Mr. Reinier is secretary of the Chicago Drug and Chemical Association and chairman of the chemical group of the National Association of Purchasing Agents.

Mr. Drach's retirement on April 2 climaxes the longest service record in Abbott's history. He started working for the firm's founder, W. C. Abbott, M.D., as a book-binder's helper at the age of 15. He was placed in charge of purchasing in 1914, made a director in 1930 and a vice president in 1947.

E. H. Wegner has been appointed Director of Purchases for Cleaver Brooks Company, Milwaukee, Wis., following his resignation as Purchasing Agent for Ladish Company of Cudahy, Wis.

more MANUFACTURERS

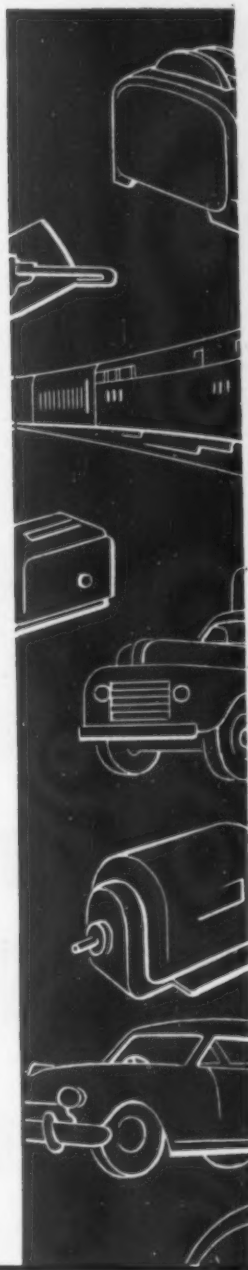
OF AMERICA'S BEST KNOWN PRODUCTS

USE **more**

The Original

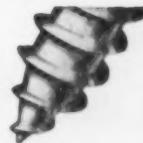
PARKER-KALON[®] SELF-TAPPING SCREWS

THAN ANY OTHER TAPPING SCREW



**... BECAUSE WITH P-K,
PLANNED SAVINGS PAY OFF**

**Be sure
you get
P-K STANDARDS
in POINTS**



P-K point design makes sure the screw starts right, drives right. For example, by specifying P-K you can be sure of well formed, sharp gimlet points on Type A. With sharp point, P-K Type A stays upright, even when holes are misaligned—doesn't tip like a blunt point screw. It takes an extra operation, costs more to make the right kind of gimlet point, but P-K does it to give you fast, trouble-free assembly.

**ORDER from the local P-K DISTRIBUTOR . . .
the SUPPLY SPECIALIST that serves you.**





Sun Grease Increases Pump Life Over 3500 Hours

- Plant:** The Hartford Faience Company, Hartford, Conn.
Product: Porcelain insulators
Application: Moyno pump
Problem: Pump wearing out in 90 hours. Cost of parts \$200 to \$500. Lubrication required every 12 hours.
Solution: Sun 864 Heavy Pale Fibre Grease
RESULTS: Pumps now lubricated only once a month. Life increased from 90 to over 3600 hours. Big savings in replacement parts.

Sun 864, because of its fibrous nature, has good sealing properties. Its ability to mix with water without breakdown is another plus. A Sun representative will gladly discuss this and other Sun products with you. Call your nearest Sun office or write SUN OIL COMPANY, Philadelphia 3, Pa., Dept. PG-5.

INDUSTRIAL PRODUCTS DEPARTMENT
SUN OIL COMPANY



PHILADELPHIA 3, PA. • SUN OIL COMPANY LTD., TORONTO & MONTREAL

Richard Kale has been appointed Purchasing Specialist in the purchasing department of Owens-Corning Fiberglas Corporation, Toledo, Ohio. Mr. Kale will assist Ben S. Wright, Vice President in Charge of Purchases and



Richard Kale

Trade Relations, in the review and analysis of corporate purchasing procedures, inventory trends, purchase contracts, stores and salvage operations and overall procurement practices and performances.

A native of Newark, Ohio, Mr. Kale joined the Fiberglas Corporation in 1942. Since then he has filled various posts in the service department and the personnel department in Newark and from 1949 until 1952 was buyer of packaging and other direct materials in the Newark purchasing department.

Harold Hosier, western region Purchasing Agent of the Charles Bruning Company, Chicago, has been Purchasing



Harold Hosier

Director of the company. Before joining Bruning, Mr. Hosier was with Bethlehem Steel Company and the Crane Paper Company.

John R. German has been appointed Purchasing Agent of Shelley Steel Corporation, Chicago, Ill.

Whenever you select a power unit, don't put a straight-jacket on your ideas . . . consider ALL of the possibilities of modern power drives.

For example consider the many useful combinations that can be secured with the basic Master power units shown below. They're designed so they can be easily combined together to give you the RIGHT horsepower, the RIGHT shaft speed, the RIGHT features in one compact unit that you can use RIGHT where you want it. Nowhere else will you find power units that are so flexible, so easily adaptable, and in such a wide range of types and ratings.

Master power drives are available in thousands and thousands of ratings ($\frac{1}{8}$ to 400 HP) . . . in open, enclosed, splash proof, fan cooled, explosion proof . . . horizontal or vertical . . . for all phases, voltages and frequencies . . . in single speed, multi-speed and variable speed types . . . with or without flanges or other special features . . . with 5 types of gear reduction up to 430 to 1 ratio . . . with electric brakes . . . with fluid-drive . . . with mechanical or electronic variable speed units . . . and for every type of mounting . . . Master has them all and so can be completely impartial in helping you select the one best power drive for YOU.

THE MASTER ELECTRIC COMPANY • DAYTON 1, OHIO

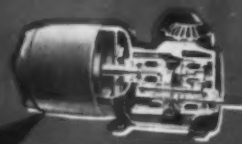
**give
your
brains
a chance**



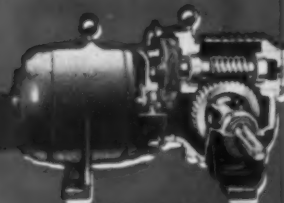
FLUID DRIVE
1 to 20 horsepower



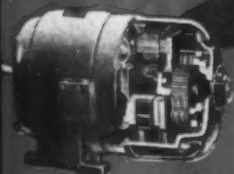
$\frac{1}{8}$ TO 400 HORSEPOWER



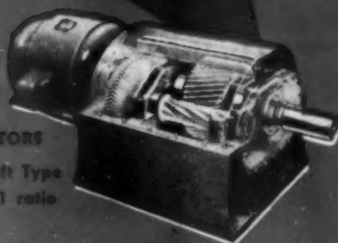
SPEEDRANGERS
For mechanical or
electronic controlled
variable speed



GEARMOTORS
Right Angle Type
up to 430:1 ratio



BRAKE MOTORS
 $\frac{1}{4}$ to 150 horsepower



GEARMOTORS
Parallel Shaft Type
up to 120:1 ratio

**DON'T
KILL
YOUR
CHANCES**

for

lower assembly costs!!



Before you tie up funds in costly tools and dies, have Milford fastener-engineers analyze your product assembly need . . . at the design stage, while plans are still flexible. It will save you money and headaches, reduce production expense, speed up assembly time, and aid you in making a better product . . . perhaps at a competitive price advantage! You can put these savings in your pocket by sending drawings and detailed description of your product fastening problem for Milford's scientific solution.



EST. 1919

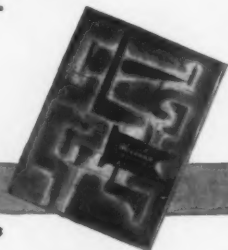
MILFORD

the name to rivet in your memory for fasteners

THE MILFORD RIVET & MACHINE CO.

865 Bridgeport Avenue, Milford, Conn.
816 Illinois Ave., Aurora, Ill.
1116 W. Rivet St., Elyria, Ohio
36 Platt Street, Hatboro, Penna.
701 So. Palm Ave., Alhambra, Calif.

Write for your copy
of the "Milford Method
for solving industry's
fastening problems".



Joseph Strafella has been promoted from Assistant Purchasing Agent to Purchasing Agent of Brunner Manufacturing Company, Utica, N. Y. Mr. Strafella has been associated with Brunner for the past 15 years, with the exception of time out to serve with the U. S. Marine Corps during World War II.



Joseph Strafella

After graduating in 1932 from New Hartford High School, Mr. Strafella attended the Babson Institute, Wellesley Hills, Mass., from which he graduated in 1936. He then joined the W. T. Grant merchandising department in New Bedford, Mass., and later joined the sales department of the Airflo Corporation, Boston, Mass.

He is active in the Purchasing Agents Association of Syracuse and Central New York and is currently a director of the organization. He resides with his wife in Waterville, N. Y.

Francis J. Frasar has been named Purchasing Agent for The Diversey Corporation, Chicago, Ill. He has had 14 years experience in the purchasing



Francis J. Frasar

field, and prior to joining Diversey he served as Procurement Coordinator for the Koppers Company, Inc., Pittsburgh, Pa., in their Chicago office.



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LEADING PRODUCERS OF FASTENERS USE ALLEGHENY METAL

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ADDRESS DEPT. P-41

Allegheny Metal fasteners are non-rusting, non-staining. They will last as long as, or longer than, the materials they join. You can count on them to stand up through the years—both in strength and in bright good looks.

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Fasteners made of Allegheny Metal are produced in complete variety—every type and size that your job requires.

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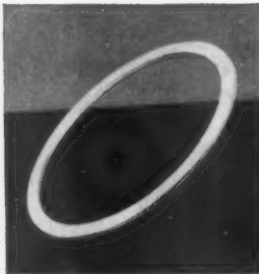




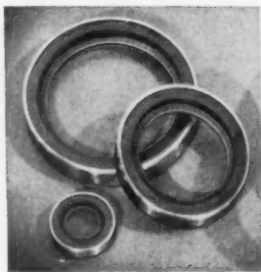
GARLOCK BITAN Leather Cups,
Packings and Gaskets



GARLOCK CHEVRON
Hydraulic Packings



GARLOCK GUARDIAN
Asbestos-metallic Gasket



GARLOCK KLOZURE Oil and
Grease Seals for Bearings



GARLOCK LATTICE-BRAID Rod
and Shaft Packings



BITAN* **CHEVRON*** **GUARDIAN*** **KLOZURE*** **LATTICE-BRAID***

These familiar brand names are registered trade-marks belonging to The Garlock Packing Company. They are never to be used as generic terms to designate types of products and are properly used only to denote products manufactured by Garlock.

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BITAN Leather Packings, CHEVRON Packings, GUARDIAN Gaskets, KLOZURE Oil Seals and LATTICE-BRAID Packings are all exclusive products of Garlock's own factories. So, wherever you see these trade-marks you can be sure that the products with which they are used are of proper design and are manufactured to the highest quality standards. They will give you long, dependable service.

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GARLOCK

® **PACKINGS, GASKETS, OIL SEALS,**
MECHANICAL SEALS,
RUBBER EXPANSION JOINTS

Harold F. Walz has been named Purchasing Agent of the Whitlock Mfg. Company, Hartford, Conn. Mr. Walz has been with Whitlock since 1936, serving in various capacities, the latest of which was in the purchasing department. He served with the Army during World War II.

W. A. Morris, Jr., formerly Director of Purchases, has been named to the new post of Vice President—Purchases, and was appointed to the management committee of Jones & Laughlin Steel Corporation, Pittsburgh, Pa.



W. A. Morris, Jr.



J. W. Lindsey

J. W. Lindsey, formerly Assistant Director of Purchases for J & L, has been named General Purchasing Agent.

A. N. Johnston, formerly Purchasing Agent, has been appointed Assistant to the Vice President—Purchases.

C. L. Brinker, formerly Assistant Purchasing Agent, has been named Assistant General Purchasing Agent—Raw Materials.

James J. Sears, Vice President in Charge of Purchasing for Rock-Ola Manufacturing Corporation, Chicago, Ill., has been named assistant to the president.

William M. Barker has been named Director of Purchases for Rock-Ola. He formerly was planning head.

Mr. Sears has been with Rock-Ola since 1933, having formerly been with the Chicago Hardware Foundry Company.

Norman W. Barker has been named Purchasing Agent for Texas Metal and Manufacturing Company, Dallas, Texas. He has had more than 17 years' aviation experience.

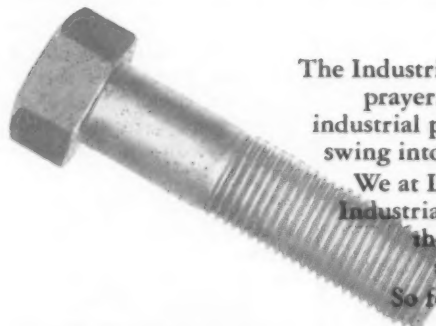
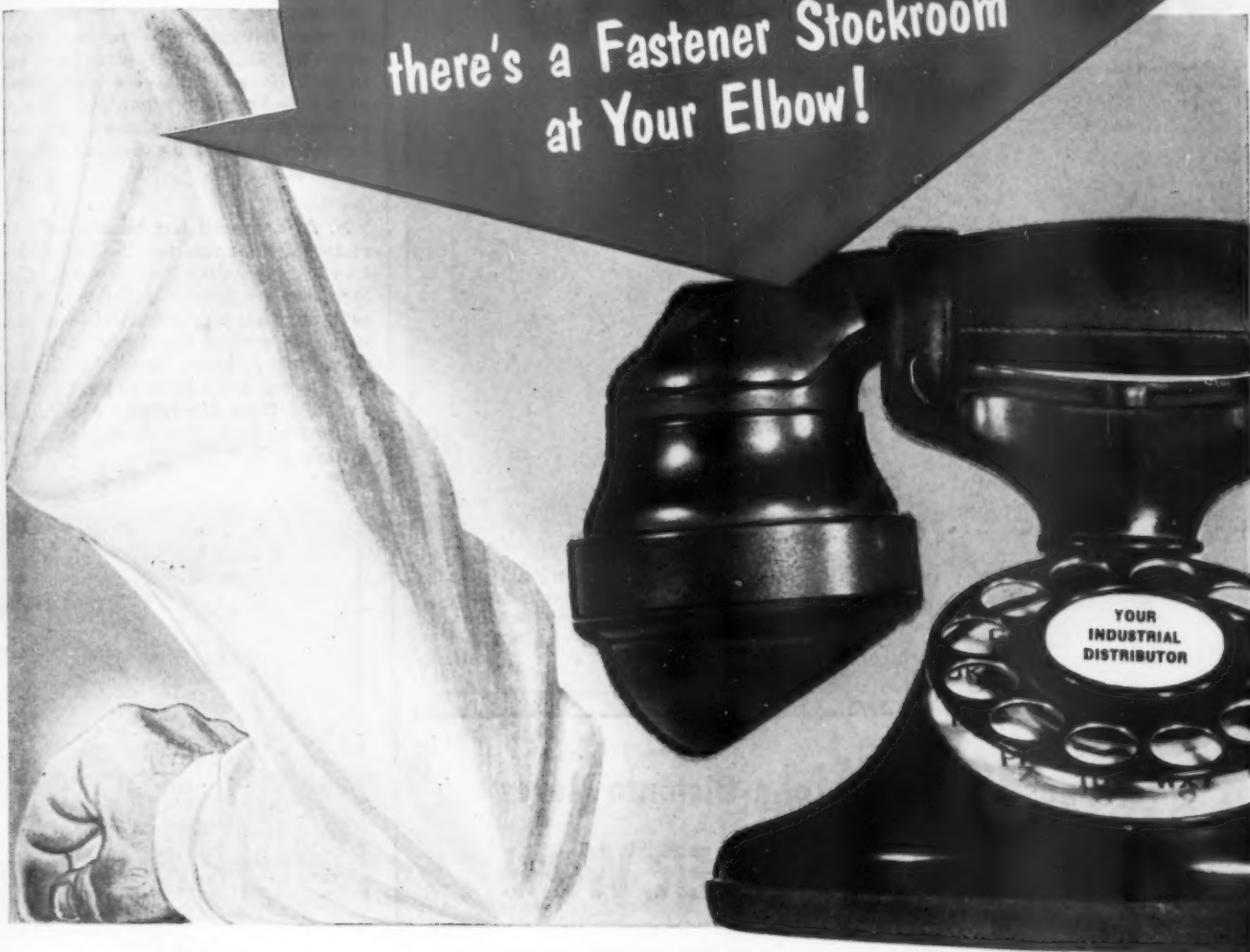
William C. Culp, Director of Purchases at the Autocar Company, Ardmore, Pa., died recently in Bryn Mawr Hospital, Philadelphia, Pa. He was 54.

Born in Berwyn, Pa., he was educated at the Easttown-Tredyffrin High School and attended the University of Pennsylvania.

He joined Autocar in 1916 as a production clerk. From 1924 to 1941 he was a real estate negotiator for the W. T. Grant Company in New York City.

He returned to Autocar in 1941, later became Assistant Purchasing Agent, Purchasing Agent, and in 1950, Director of Purchases.

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We at Lamson & Sessions work hand in hand with leading Industrial Distributors from coast to coast continuously supplying them with complete selections of quality bolts, nuts, screws and other fastener products.

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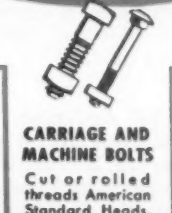


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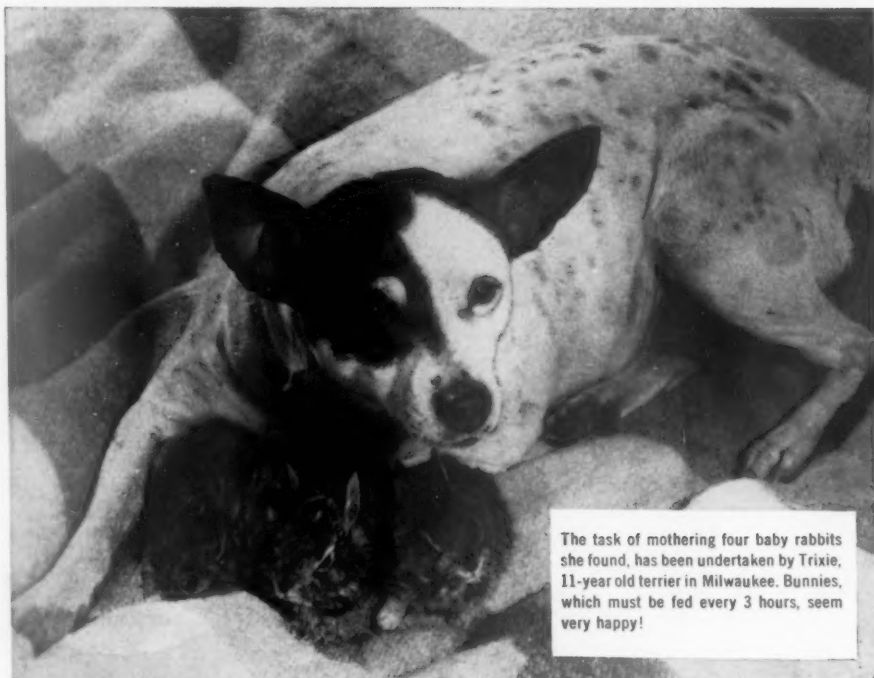
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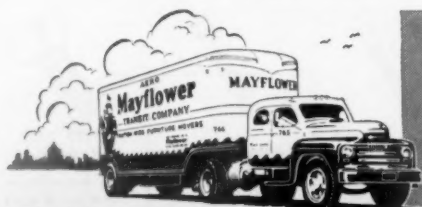
The task of mothering four baby rabbits she found, has been undertaken by Trixie, 11-year old terrier in Milwaukee. Bunnies, which must be fed every 3 hours, seem very happy!

for Unusual Care on Long-Distance Moves Go the **MAYFLOWER** Way!

► In long-distance moving unusual care means extra protection, extra-precaution, extra attention to every detail! That's what you want . . . and that's what you get when you move your personnel the safe and easy Mayflower Way! Mayflower has standardized into its service—and in many cases pioneered—more major refinements in long-distance moving than any other carrier. Scientific personnel selection procedures, movers' training school, equipment manufactured to special specification, organized, preventive maintenance, special packing materials, and elimination of tail-gates are but a few. That's why it will pay you to call your local Mayflower representative whenever you have personnel to move long-distance!

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NATION-WIDE FURNITURE MOVERS

Robert G. Hills has been named Director of Purchases for Nesco, Inc., Milwaukee, Wis. He has been with Nesco as Purchasing Agent for the Jacksonville, Ill., factory for more than 10 years, having joined the firm shortly after the Jacksonville plant was built in 1942. He will make his headquarters at the Jacksonville plant. Mr. Hills replaces Walter H. Lohman, who was located at the Nesco executive offices in Milwaukee.

N. A. Lamberti has been named Director of Materials for McCulloch Motors Corporation, Los Angeles, Calif. Mr. Lamberti joined McCulloch in 1950 as industrial engineer and was subsequently named Purchasing Agent. A native of Ankeny, Iowa, he holds a B.S. degree from Iowa State, 1943, and an M.A. from University of Southern California, 1950, both in industrial engineering.



N. A. Lamberti

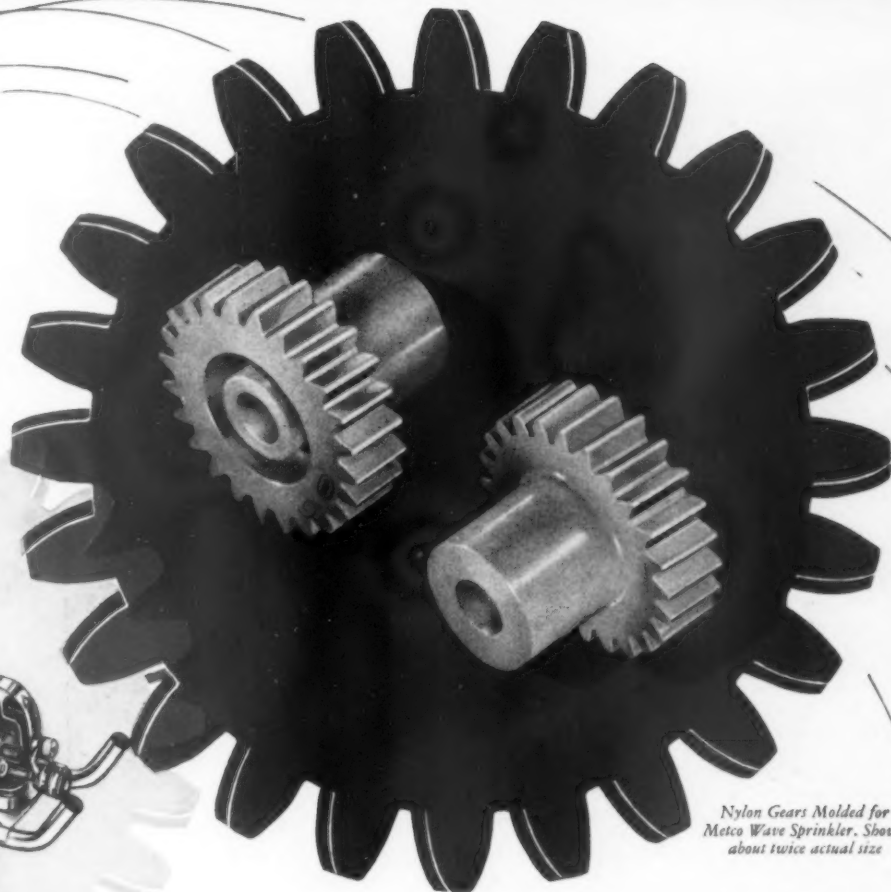
Cooper Gwin has been appointed Assistant Purchasing Agent by McCulloch. Mr. Gwin joined the company as a shopworker in 1946 and has served as a foreman and Senior Buyer.

H. F. Price, Assistant District Purchasing Agent for Bethlehem Pacific's Seattle district, has been appointed District Purchasing Agent.

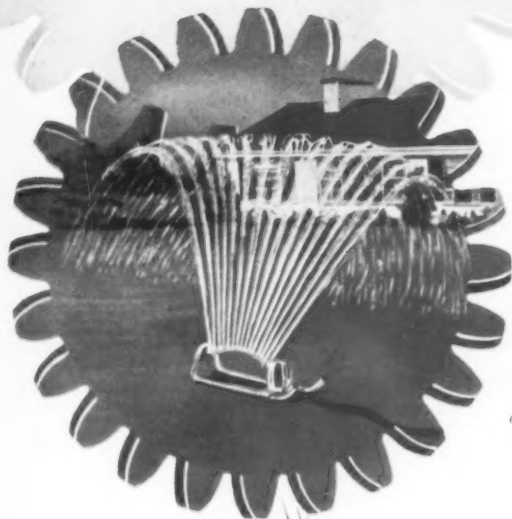
A native of Chicago, Ill., Mr. Price moved to Seattle at the age of five. He was educated in Seattle schools and went to work as a scrap-yard checker at Bethlehem Pacific's Seattle plant in 1918, at that time the old Pacific Coast Steel Company.

In 1930, the year Bethlehem Steel Company acquired the plant, Mr. Price was named scrap accountant. In 1935 he was appointed assistant to the District Purchasing Agent. He was appointed Assistant District Purchasing Agent in 1947.

A. Boyd Anderson, who has served as Purchasing Agent and Book Store Manager at Washington and Jefferson College since 1946, has been named assistant to the Superintendent at Washington Hospital, Washington, Pa.



Nylon Gears Molded for Metco Wave Sprinkler. Shown about twice actual size



Write on your letterhead for the new Injection Molded and Extruded Plastics Catalog. Or, for detailed information about **WELD PLASTIC*** piping, tubing and fittings, write for circulars containing data and illustrations.

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Skillful Molding DOES A WELL GEARED JOB

"... For long life with low wear, a non-metallic gear was a design requirement for the Metco Wave Sprinkler. We chose molded gears for economy and because of the wide range of materials which can be molded. We chose nylon as the molding material because of its high wet strength, low moisture absorption and abrasion resistance when operated with water as the only lubricant."

This excerpt from a letter by Mr. C. K. Wilson, Design Engineer for Metallizing Engineering Company, Long Island City, New York, effectively presents a strong case for molded gears.

If Mr. Wilson had continued in that vein, he might also have said, "We chose Elmer E. Mills Corporation because it is one of the few molders in the country equipped to mold nylon gears."

Why? Because this type of thermoplastic molding presents a challenge few molders care to meet. Since these were undercut "helical" gears instead of the straight "spur" gears, their production presented an unusually difficult job of molding and tool making. Despite the fact that only a few molders can make them, the use of thermoplastic gears is very much on the increase.

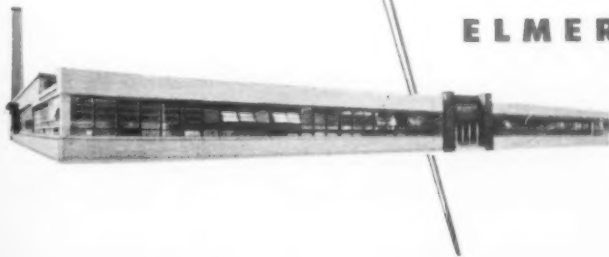
Wherever they are used, it is either a case of greater production economy, functional superiority, or both.

So when you are studying the problem of gears for your products, consider the advantages of nylon or other thermoplastic gears. Then let us show how well geared we are to solve this problem for you.

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**REGARDLESS OF THE SIZE
AND TYPE OF YOUR MACHIN-
ERY, LUBRIPLATE
LUBRICANTS WILL IMPROVE
ITS OPERATION AND REDUCE
MAINTENANCE COSTS.**



William F. Alexander has been named Assistant Manager of the Procurement Department of Koppers Company, Inc., Pittsburgh, Pa. Since 1948 Mr. Alexander has been responsible for purchasing of materials for the many coke oven and steel plant construction projects of Koppers Engineering and Construction Division throughout the Western Hemisphere.



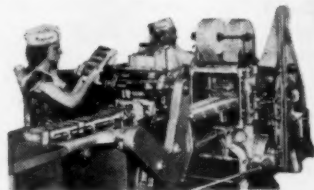
William F. Alexander

In addition to his Koppers responsibilities, Mr. Alexander is president of the Borough Council of Emsworth, Pa., and a director of the North Boroughs Building and Loan Association. A native of Pittsburgh, Pa., Mr. Alexander received his early education in Beaver Falls and Pittsburgh. From 1919 to 1923 he was associated with the Dravo Corporation and joined Koppers as a clerk in the company's former purchasing department in 1923.

From 1936 to 1942 he was a buyer of materials utilized by Koppers Engineering and Construction, Tar Products and Wood Preserving Divisions, as well as by the company's former Koppers Coal Division. He was named Purchasing Agent in charge of raw materials and supplies for Koppers Chemical Division from 1942 until 1948. Since that time he has been manager of the engineering and construction section of the Procurement Department.

James E. Krajovic has been appointed Purchasing Agent of the Brosius Division of Salem-Brosius, Inc., succeeding Alfred G. Lewis, who has retired. Mr. Krajovic will be located in Salem, Ohio, where the purchasing, engineering and accounting functions of the Brosius and Salem Engineering Divisions have been consolidated.

Walter Lohman has been appointed Manager of the Material Control Division of the Heil Company, Milwaukee, Wis., and will be responsible for all functions of the general purchasing, steel control, shipping and traffic departments. He formerly was Director of Purchases at Nesco, Inc.



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—says LYNCH CORPORATION
Toledo, Ohio

"LUBRIPLATE greatly reduces unnecessary wear and prolongs the life of machines. It has reduced customer calls for service to a minimum. Our Service Engineers can readily spot machines that have had other than LUBRIPLATE Lubrication, as these machines do not give the service they should."

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LUBRICANTS WILL IMPROVE
ITS OPERATION AND REDUCE
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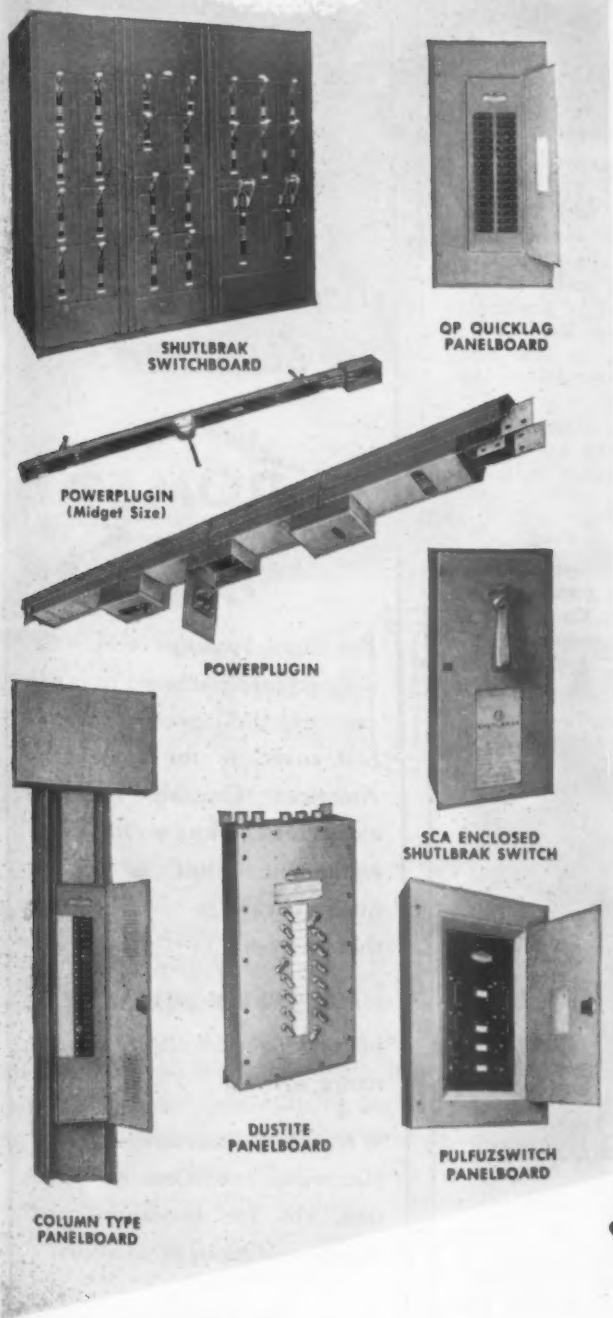
New Production Unit —
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ⓕA PRODUCTS for the control and distribution of power and light have been specifically geared to the needs of the factory of today and tomorrow.

Besides being safe, efficient, dependable, economical, long-lasting and trouble-free, all ⓕA switchboards, panelboards, busduct and other similar equipment used in modern industry, have been designed to provide the electrical capacity needed for today and allow for future expansion by the simple addition of necessary units.

If you are planning a new factory, or modernization and improvement of an existing plant — regardless of size — be sure that your electrical distribution system is suited to your needs. Install ⓕA products — the equipment with a future.

For additional information, consult your nearest ⓕA representative, listed in Sweet's, or write for bulletins.



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Makers of: BUSDUCT • PANELBOARDS • SWITCHBOARDS • SERVICE EQUIPMENT • SAFETY SWITCHES • LOAD CENTERS • QUIKHETER

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TAPPING • EXTRUDING • STENCILING

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John W. Averill has been appointed Purchasing Agent for the Stromberg-Carlson Company, Rochester, N. Y., succeeding David Rogers, who has resigned.



John W. Averill

Mr. Averill has been with the company since 1942 and has served in the purchasing department since 1946. During the war years, prior to his military service, he was engaged in production control for the company. Before joining Stromberg-Carlson, he was associated with his father in the oil distributing business.

A graduate of the University of Pennsylvania, he majored in economics, earning his B.S. degree in industrial management.

Paul W. Knox has joined the central purchasing staff of the Eaton Manufacturing Company, at the general offices in Cleveland, Ohio. Mr. Knox will be responsible for the procurement of the entire requirement of steel for the company.



Paul W. Knox

Before joining Eaton, Mr. Knox worked in various capacities for 17 years with the U. S. Steel Corporation, starting with American Sheet and Tin Plate Company and the Carnegie-Illinois Steel Corporation, predecessors of U. S. Steel. His most recent position was that of service manager of the Cleveland district of U. S. Steel.



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Bearing Service
Assured!*



Bearings, bushings and wearing parts are machined or rough cast of the specific formula best suited to the application. American Crucible methods, experience, know-how and equipment result in highest quality bearings . . . bearings that carry a

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of longer service, lower maintenance cost.

Write for literature or send blueprints, conditions of operation, etc. for quotations and recommendations as to alloys.

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making glass behave

... in continuous ribbons of plate glass

or continuous filaments of Fiber Glass



Extremes in utility, extremes in form—and excellent illustrations of the skills acquired by Pittsburgh Plate Glass Company in 70 years of glassmaking.

PPG makes glass behave . . . drawing it into the tiny continuous filaments of gossamer fineness for Fiber Glass just as skillfully as it rolls it into continuous ribbons of plate glass. From raw materials, through all the intricacies of manufacture, PPG Fiber Glass is made to meet the most exacting needs.

If Fiber Glass is used in your products—or if you contemplate its use to replace other materials—investigate the many advantages provided by PPG facilities. Pittsburgh Plate Glass Company, 420 Duquesne Way, Pittsburgh 22, Pa.

You can obtain PPG Fiber Glass in these forms

Superfine Insulation—Extremely light-weight, efficient thermal/acoustical insulation for aircraft, automobiles, household appliances, cold-weather garments, etc. Available with foil and vinyl facings as well as un-faced.

Yarns, Strands and Roving—For industrial and decorative textiles; reinforcement of plastics, paper and rubber; electrical insulations.

PPG field engineers are available to work with you on any applications involving the use of these Fiber Glass products.



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CAN MAKE THEM FOR YOU!

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Or, if you are a user of connectors and components, including AN Types, RF Types, Rack and Panel Types, and special items, we can help you with your requirements.

A new HHB catalog is available illustrating many of these outstanding products of HHB craftsmanship. A copy will be mailed to you if requested on your business letterhead.



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*Skilled in Electronic Component Parts
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MANUFACTURING*

Roger E. Bremer has been appointed Director of Purchasing for Packard Motor Car Company, Detroit, Mich., succeeding Russell R. Rees, who has retired after 38 years of service with the company. Mr. Bremer, 37, joins



Roger E. Bremer



Russell R. Rees

Packard after serving as Purchasing Agent for Lincoln-Mercury. He previously had been Manager of Purchase Analysis for Ford Motor Company. A certified public accountant, he was for two years an executive with the Office of Price Administration. During World War II Mr. Bremer was with the Navy Bureau of Supplies, and after service duty joined Pepsi-Cola as assistant to the president. He is a Phi Beta Kappa, a member of the National Association of Purchasing Agents and the National Association of Cost Accountants.

Mr. Rees had been head of Packard purchasing since 1945. He started with the company in 1915 as a construction engineer, was plant engineer from 1921 until 1943, and from 1943 to 1945 was manager of the Toledo Aircraft Plant.

Peter G. Calvello has been named Director of Purchases for the Cory Division of Cory Corporation, Chicago, Ill. Mr. Calvello has been with Cory for 19 years. In that time he has been



Peter G. Calvello

associated with several of the factory departments, including assembly, shipping and receiving, inventory control, personnel costing, and planning and purchasing. In his new position, Mr. Calvello will be responsible for the procurement of all factory materials for the Cory Division of Cory Corporation.

self-locking fasteners

Elastic Stop nuts



HEX NUT



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1200° F. HIGH-TEMP. NUT



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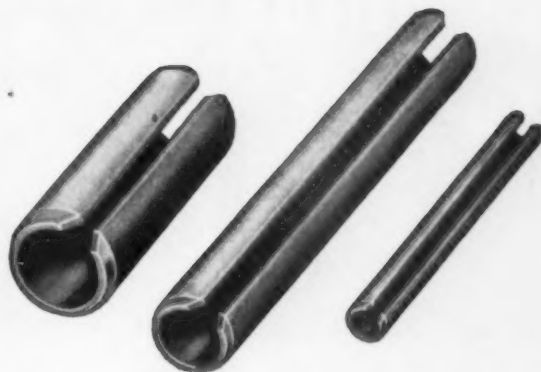
FLOATING ANCHOR NUT

Every major aircraft now being assembled relies on the vibration-proof holding power of ELASTIC STOP nuts. Only ESNA manufactures a complete line of all types and sizes of self-locking nuts.



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Rollpins



dia. from 1/16" to 1/2"

Rollpins are slotted, tubular steel, pressed-fit pins with chamfered ends. They drive easily into holes drilled to normal tolerances, compressing as driven. Extra assembly steps like hole reaming or peening are eliminated. Rollpins *lock* in place, yet are readily removed with a punch and may be reused.

Cut assembly costs by using Rollpins as set screws, positioning dowels, clevis or hinge pins. Specify them in place of straight, serrated, tapered or cotter type pins.



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DIRT

THE GRIME on a small boy's face—the rust on steel sheets—the welding flux on aluminum parts—the machining oil on nuts and bolts. All these are dirt—stuff that shouldn't be where it is.

Some dirt comes off on the bathroom towel, but a lot of it defies wiping—even brushing and scraping won't get rid of it.

You've got to go after some dirt with a hot soak in a strong alkaline detergent. You've got to hit other kinds with steam-cleaning or solvent detergents. You need inhibited acids for tough scale deposits, phosphating compounds when parts are to be painted after cleaning.

New metals, new materials—like aluminum, stainless steel, ceramics, plastics—all these complicate the dirt removal problem. Surfaces and treatments differ—ask his mother whether she'd rather wipe the boy or wash the towel.

New production methods, too, demand new cleaning techniques. The more precise the engineering, the more critical the cleaning. You can't be satisfied with something that just looks clean—it's got to *be* clean, or it'll show up in the finished chrome job, in the enamel that starts to chip.

You can't just wipe dirt off any more. Now you need an expert—your local Oakite Technical Service Representative. Your dirt's his problem—chances are he has the solution. Give him a call today, or write Oakite Products, Inc., 54 Rector St., New York 6, N. Y.



Technical Service Representatives Located in Principal Cities of United States and Canada

Stanley W. Mackenzie, Director of Purchases, United States Rubber Company, New York City, was named chairman of the folding box panel session conducted during the American Management Association's National Packaging Conference, April 20-22, at Navy Pier, Chicago, Ill.

William J. Pethick has been appointed Purchasing Agent of the Safety Car Heating and Lighting Company, Hamden, Conn., succeeding **A. B. Swartz**, who has retired after 43 years with the company. Mr. Swartz headed the purchasing department since 1928. He is a member of the Elks, a Mason, and a member of the Purchasing Agents Association and the Safety Quartum Club.

Mr. Pethick has been with Safety Car since 1921 and held various posts in the purchasing department before becoming assistant to Mr. Swartz in 1942.

Clarence S. Arity has been named District Buyer at Detroit, Mich., for Standard Oil Company (Indiana). The appointment is part of a new decentralized purchasing policy for the company, which is designed to improve purchasing department services to sales fields and refineries. Local supplies will be purchased in each area whenever possible. The Detroit office, the Standard's first outlying district purchasing office, is located at its 1011 Fourth Street sales office.

Mr. Arity joined Standard in 1947 as an inspection engineer at the company's Whiting, Ind. refinery, where he later served as assistant staff engineer. In 1951 he became an assistant buyer in the purchasing department in the company's general office at Chicago, Ill. He is a graduate in engineering from the University of Minnesota.

Paul W. Beda has resigned as Vice President in Charge of Purchases for Old Ben Coal Corporation, Chicago, Ill., after 48 years' service with Old Ben and a predecessor company, Wilmington Star Mining Company.

Gordon Buchanan, Jr., who has been Mr. Beda's assistant since the end of World War II, has been appointed Purchasing Agent. Mr. Buchanan joined the company in 1922.

Alfred D. Hoyle, Assistant General Purchasing Agent of Brown Company, Berlin, N. Y., has retired after 46 years of service with the company. His first association was with Burgess Sulphite Fibre Company in its Boston office. The firm was later purchased by Berlin Mills Company, now known as Brown Company. In 1908, Mr. Hoyle was transferred to the Brown Company office in Portland, Me., and in 1914, went to Berlin.

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TOUGH...



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will give you
more holes per grind...



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These extinguishers are for shipping room fire hazards: (L to R) Pyrene Cartridge-Operated, Anti-Freeze or Water Type; Pump Tank; and Soda-Acid Type.

40% of all businesses fold up when fire gets out of control

We're not trying to scare you, we only want to urge you to buy *enough* of the *right type* of extinguishers *in time* and have them *handy* wherever you have a fire hazard. Your local Pyrene* jobber has the right Pyrene equipment to cope with any fire hazard you may have—everything from hand extinguishers to automatic systems. He also carries Pyrene recharges. One call to him, one purchase order, one invoice will take care of any need you may have. Write us for his address.

*T.M. Reg. U.S. Pat. Off.

Portable fire extinguishers: vaporizing liquid, soda-acid, foam, cartridge-operated, carbon dioxide, dry chemical, and pump tanks • **Wheeled extinguishers:** soda-acid, foam, carbon dioxide, dry chemical types • **Air foam play pipes** • **Systems** for special hazards



PYRENE MANUFACTURING COMPANY
578 Belmont Ave. Newark 8, New Jersey

Affiliated with C-O-Two Fire Equipment Co.

John A. Dwyer, Purchasing Agent for the Philadelphia and Reading Coal and Iron Company, Philadelphia, Pa., has been named Director of Purchases for the company. The new appointment is part of a consolidation of the firm's purchasing department activities and the transfer of all such activities to its Pottsville offices.

John P. Buckley, presently Supervisor of Materials and Transportation, becomes Purchasing Agent. Both men will be located in the P and R Building at 200 Mahantongo Street, Pottsville.

The new department will have authority over all purchases of the P and R Company, and its subsidiary companies: Shen-Penn Production Company, Wadesville Production Company, Berks Building Block Corporation, Butler Township Water Company, and Reading Anthracite Canadian Company, Ltd.

Mr. Dwyer has been with P and R for many years having worked in the purchasing department of The Philadelphia and Reading Coal and Iron Company when that company was a division of the P and R Railroad. When these companies were separated in the 1920's, Mr. Dwyer continued with the new P and R company.

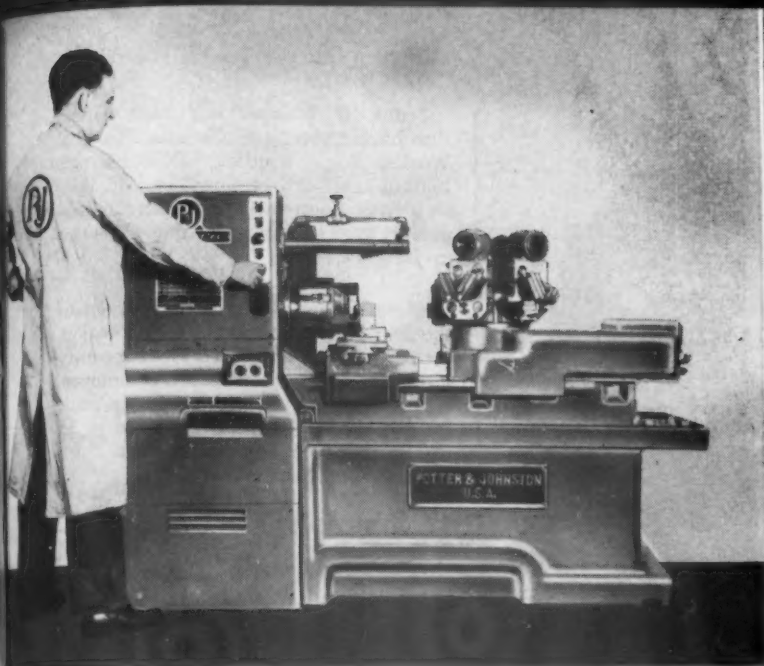
John F. Quirk has been named Director of Purchases of Federated Purchaser, Inc., New York City. In this newly-created post, Mr. Quirk will coordinate the purchasing activities of the electronics parts distributing firm.

Mr. Quirk formerly was in charge of electronic and mechanical sub-contracting for the Sandia Corporation, Western Electric's subsidiary in New Mexico under contract to the Atomic Energy Commission. With Western Electric since 1936, he had also been with that firm's quality control and purchasing departments at Kearny, N. J., the tube shop in New York and the Allentown, Pa., electronics section. He graduated from Georgetown University with an AB in 1935, and attended Fordham University Law School.

William F. Gerety has been named Director of Purchasing for Kaman Aircraft, Hartford, Conn., succeeding **John J. Carson**, who has resigned.

Mr. Gerety joined Chance Vought Division of United Aircraft Corporation in 1942 as sub-contract manager and was appointed Assistant Purchasing Agent at CV in 1946. In 1950 he became Vought's Purchasing Agent. He joined Kaman in 1952.

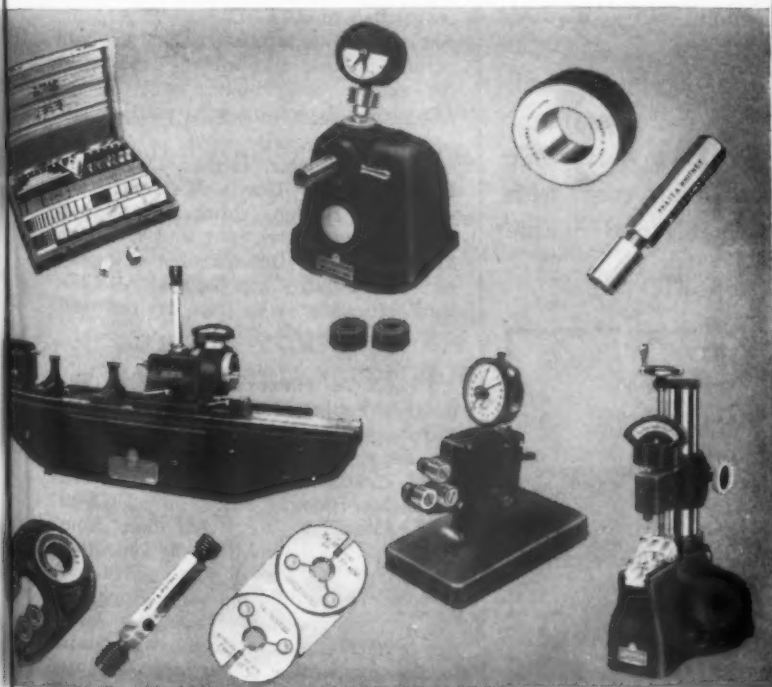
E. E. Middleton, formerly Assistant Purchasing Agent for Parke, Davis & Company, Detroit, Mich., has been named Purchasing Agent.



If it's Automatics PLUS Tooling

like the Potter & Johnston Automatic Turret Lathe

When profitable production calls for a high output of precision parts, you can help yourself to greater speed, accuracy and economy with a call to your Pratt & Whitney-P & J Representative. Thoroughly experienced in practical manufacturing problems . . . and working closely and constantly with our factory engineers, he'll make sure that you get the P&J Machines *plus* P&J Tooling best for your specific needs.



If it's Gages to maintain the master and working standards in Industry

The Pratt & Whitney Man you'll talk to is a Gage specialist who represents a Company which manufactures a great variety of gages and gaging equipment. When he recommends the *right* gage for your job, you can be sure he's thinking about your problem . . . not merely trying to sell the only thing he has to offer from a limited line. In every gaging problem, there's one type of P&W Gage that does the job better than any other . . . and that's what he'll recommend.

Stocks of regularly listed Cutting Tools and Gages.

Wherever You Are



THE
PRATT & WHITNEY MAN
is available WHEN you need him

because he works out of the Pratt & Whitney Branch Office and Warehouse conveniently located near you. His expert advice is as near as your telephone . . . and comprehensive stocks of Pratt & Whitney Cutting Tools and Gages are available to meet your immediate needs.

PRATT & WHITNEY
DIVISION NILES-BEMENT-POND COMPANY
WEST HARTFORD 1, CONNECTICUT, U. S. A.

First Choice  for Accuracy



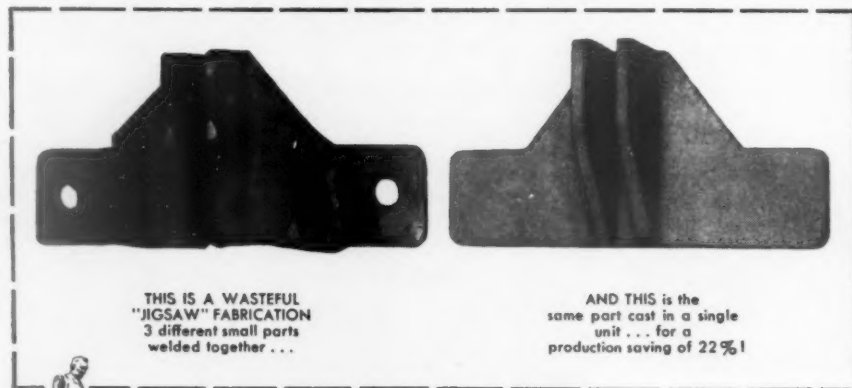
Leave jigsaw puzzles to the kids—

Don't waste valuable manpower on
"jigsaw" assembly jobs!

Many time consuming fabrications can be cast as a single unit—more economically, and with better appearance, by Sacks-Barlow and Newark Malleable.

We'll be glad to go over all of

your parts and help you eliminate costly "jigsaw" operations. You're sure to make worthwhile savings in production costs with our gray, malleable and ductile iron castings.



SACKS-BARLOW

FOUNDRIES, INC.
NEWARK MALLEABLE IRON WORKS

357 Wilson Avenue, Newark, N. J.

Resident Representatives in
New York, Philadelphia, Boston, Baltimore and Bridgeport, Conn.

Frank B. Ralston has been named Purchasing Agent of Carlisle Chemical Works, Inc., Reading, Ohio. Before joining the Carlisle company, Mr. Ralston was connected in a similar capacity with Owens-Corning-Fiberglas in Newark, Ohio.

Edgar G. Spitz, Purchasing Agent of the Newark, N. J. Board of Education, retired from active service recently after 46 years as a board employee. Mr. Spitz began work in the Newark school system as an office boy in December, 1906 and was named Purchasing Agent seven years ago.

Max Van Baaren, a seven-year veteran of the airlines industry and a pilot for more than 10 years, has been appointed Purchasing Agent for Mohawk Airlines, Ithaca, N. Y. Mr. Van Baaren served as Assistant Purchasing Agent for KLM Royal Dutch Airlines from 1946 until 1949. He was assistant to the traffic manager for National Airlines in 1949 and 1950 and for the last three years he has been export and import manager and corporate secretary for Air Wings, Inc.

In 1942, he enlisted in the Netherlands Air Force and became a first lieutenant pilot and navigator, serving in the Southwest Pacific Area.

Mr. Van Baaren joined the Civil Air Patrol in 1949 and is now a major in the New York State Wing.

Paul R. Van Deman, veteran member of the Mohawk accounting department, has been serving as Purchasing Agent for the last two years. He will return to the accounting department for special assignment work in the company's expansion program.

Frank J. Sieler, former Director of Purchasing for Gerity-Michigan Corporation, Adrian, Mich., has been named a vice president and treasurer of Deering Air Conditioning Corporation, Cincinnati, Ohio. He replaces Clifford Huesgen, who has retired and moved to Florida.

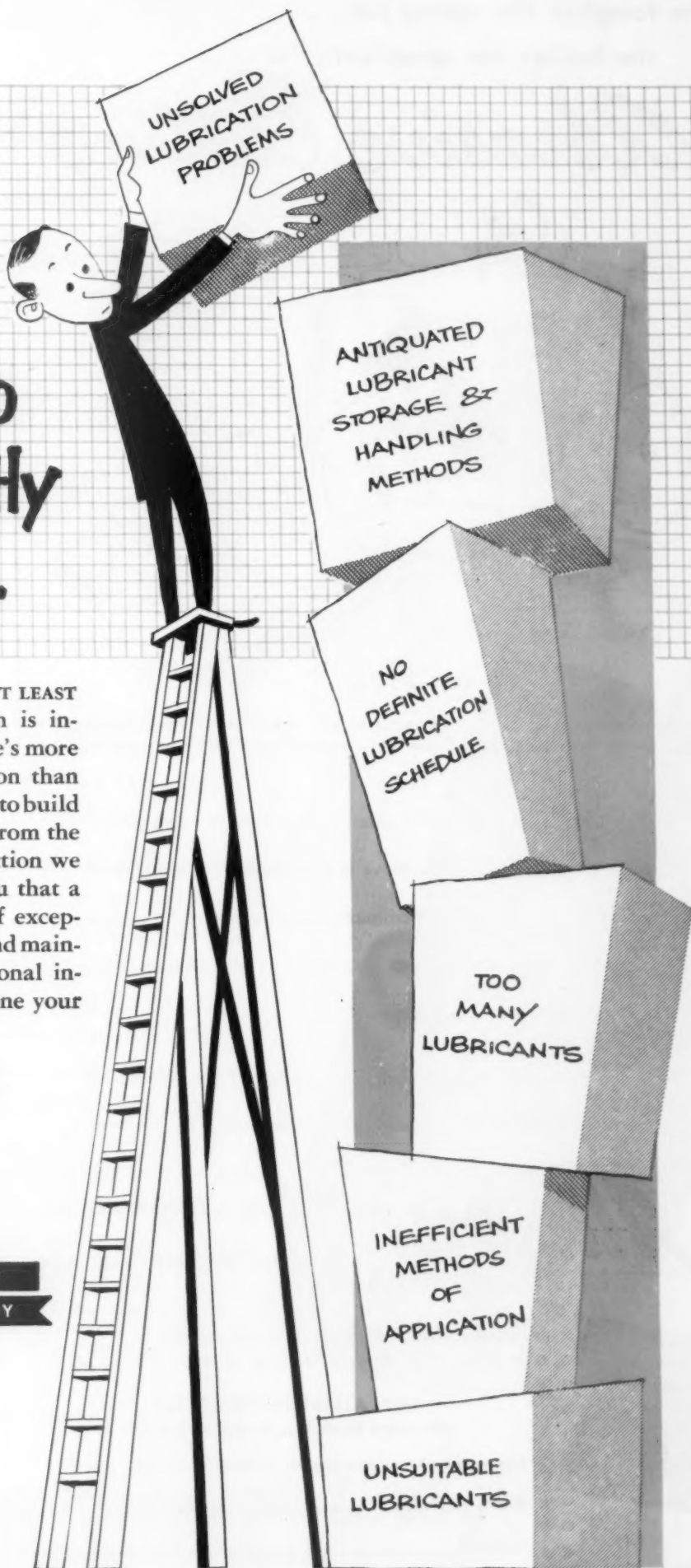
Joseph A. Habansky has been appointed Supervisor of Production and Purchasing in the vacuum cleaner and fan department operation of the General Electric Company, Bridgeport, Conn. Mr. Habansky first joined GE in 1933, following his graduation from Harding High School. He was appointed to his first purchasing post in 1944 and in 1948 was named Assistant Buyer in the fan purchasing section. He later was named assistant to the supervisor in the purchasing department, a post he held at the time of his recent appointment.

Jack Feisler has been appointed Purchasing Agent and office manager of the Wm. F. McGraw Company, Milwaukee, Wis. He has been associated with the McGraw Company in the order department for the past seven years. He was formerly associated with Standard Press Steel.

Building up to a costly letdown...

OF COURSE YOU'RE NOT—OR AT LEAST NOT CONSCIOUSLY. The sketch is intended to remind you that there's more to lubricants and to lubrication than price per gallon. It's important to build a sound lubrication structure from the bottom up. And in this connection we would also like to remind you that a Gulf Sales Engineer can be of exceptional help to your operating and maintenance personnel. For additional information write, wire, or phone your nearest Gulf office.

**GULF OIL CORPORATION
GULF REFINING COMPANY
Pittsburgh 30, Pennsylvania**



the tougher the cutting job . . .
the better the opportunity for . . .

Abrasive Cutting



"FOR YOUR INFORMATION . . . I DON'T KEEP MY MONEY IN MY PANTS ANYMORE!"

Today's applications for abrasive cutting are as *ingenious and practical* as the one shown above is ridiculous. It is used to cut all kinds of metals, from aluminum to uranium, as well as glass, ceramics, plastics, and building materials . . . and most important, it *cuts faster, cleaner, and cheaper.*

If you have a cutting problem, investigate the abrasive wheel method. Call Allison, *specialists in abrasive cutting for 30 years.*

Allison
ABRASIVE CUTTING WHEELS

THE *best* WAY TO CUT MANY MATERIALS
THE *only* WAY TO CUT SOME



SEND FOR THIS HELPFUL BOOK ON ABRASIVE CUTTING

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259 Island Brook Ave., Bridgeport 8, Conn.

Please send me your free booklet on Abrasive Cutting:

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ADDRESS: _____

9ALB3A

Edmond P. Joy, Director of Purchasing and Manufacture of Pocket Books, Inc., wholly owned subsidiary of Field Enterprises, Inc., Chicago, Ill., has been elected a vice president of Pocket Books. Mr. Joy has had many years of experience in the printing industry in Chicago with the W. F. Hall Printing Company, Esquire magazine and Regensteiner Corporation.

Paul Wade has been appointed Purchasing Agent of Associated Research, Incorporated, Chicago, Ill.

Clarence E. Michaels, Assistant to the Purchasing Agent, Tennessee Coal & Iron Division of U. S. Steel Corporation, New York City, has retired after more than 35 years of service with the company. **Samuel W. Vaughan**, Purchase Analyst, has been named to succeed Mr. Michaels in the Birmingham, Ala., post. Mr. Michaels started with the company as chief clerk in the purchasing department in 1917.

James F. Redmond, Director of Purchases for the Chicago, Ill. public schools, has been named superintendent of the Orleans Parish School Board at New Orleans, La. Mr. Redmond, 37, a former Kansas City and New York City school principal, went to Chicago as assistant to Superintendent Harold C. Hunt and administrative trouble shooter. He succeeded Arthur C. Schweitzer as Purchasing Agent.

Anthony Siragusa, Purchasing Agent—Non-Ferrous Metals, United States Steel Corporation, Pittsburgh, Pa., died recently at the age of 53.

Mr. Siragusa, who had spent his entire business career with U. S. Steel, went to Pittsburgh from New York City in August, 1948 as Assistant to the Vice President—Purchasing. In May, 1951, he was named Purchasing Agent—Non-Ferrous Metals. Before going to Pittsburgh, he was Supervising Buyer, purchasing division, U. S. Steel Corporation, New York.

He was a member of the American Iron and Steel Institute, and secretary of the Committee on Metallic Coatings Materials and the Committee on Palm Oil, both of the AISI. He was also a director of the American Tin Trade Association, and a member of the Alloying and Metallic Coating Materials Committee of the Defense Production Administration.

In addition, Mr. Siragusa served as advisor on tin and palm oil purchases to the General Services Administration and advisor on the steel industry's requirements of palm oil to the U. S. Department of Agriculture. On a number of occasions Mr. Siragusa was an advisor on United States delegations to successive International Tin Study Group meetings abroad, attending such sessions at The Hague, Geneva, London and Rome. Surviving are his widow and a daughter.

C-D-F *know how*

Designed and Fabricated

this **DILECTO GROMMET**

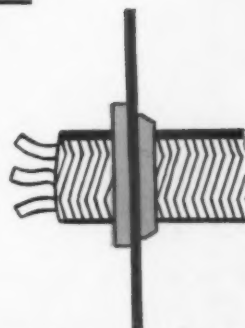


It springs out and holds tight!

Here's an idea and an example of C-D-F engineering skill teamed up with versatile Dilecto — laminated rolled plastic tubing — that can help you. Thousands of Dilecto grommets are being used in the aircraft industry for wire and cables that pass through bulkheads. Made from fine weave canvas, the C-D-F Dilecto grommet is cut into rings. The rings are grooved and beveled, then slit diagonally. The Dilecto grommet has a built-in tension that permits it to be easily compressed by hand and inserted in the bulkhead. Tension holds it tightly in place. It cushions. It insulates. It reduces assembly time.

DILECTO is a C-D-F top quality laminated thermosetting plastic whose uses are limited only by the imagination. Supplied in sheets, rods, tubes, Dilecto answers most electrical and radio needs for a material that is mechanically and dielectrically strong . . . resistant to high heat, hot oil, excessive humidity. It can be punched, stamped, formed and machined to close tolerances. Investigate its possibilities. Available in many grades to meet a variety of requirements. A qualified plastics specialist, your C-D-F sales engineer (offices in principal cities) will help you engineer a better product. Why not call him today!

Another example of a part machined from Dilecto rolled tubing. Notice variety of machining steps and the possible versatility of this mechanically strong material. Only C-D-F makes Dilecto in sheet, tube and rod forms.



Here's a side-view of a Dilecto grommet, machined to close tolerances from laminated rolled tubing. Sample of grommet and a general catalog will be sent on request.



THE NAME TO REMEMBER



DILECTO LAMINATED PLASTIC

Continental-Diamond Fibre Company
NEWARK 41, DELAWARE

INDUSTRIAL Developments



The Black & Decker Mfg. Company, Towson, Md., has announced plans to build immediately a 126,800 square foot addition to its Hampstead, Md. branch plant. This will more than double the present size of the Hampstead plant. Construction will begin shortly, with the final completion scheduled for November. However, it is expected that the new addition will go into partial operation as early as September. The new addition will be all on one floor level.

The Timken Roller Bearing Company, Canton, Ohio, has announced a multi-million dollar expansion and program for its plant in Bucyrus, Ohio. A new toolroom will be built to house the maintenance, repair, electrical, sheet metal departments, and all stores. This building will be 100' x 220' and will have an office building measuring 40' x 100' attached to it. This will provide space for the plant management, accounting, personnel and medical departments. A locker room and cafeteria building will be constructed, measuring about 8,000 square feet. A new boiler plant designed for a capacity of 80,000 pounds per hour will be constructed. The two boilers will be provided with three alternate methods of firing—coal, oil and gas. New machinery and production equipment will be installed and should be in full production by the end of 1954.

Diamond Alkali Company, Cleveland, Ohio, has changed the name of its subsidiary, Kolker Chemical Works, Inc., to Diamond Alkali Organic Chemicals Division, Inc.

Libbey-Owens-Ford Glass Company, Toledo, Ohio, has placed orders for machinery and equipment that will double the textile fiber glass capacity of its Fiber Glass division in Parkersburg, W. Va. The expansion program will mean the installation of 48 additional producing units for making textile fiber glass, and will require a year to complete.

Norton Company of Worcester, Mass. took the wraps off the new \$6,000,000 expansion of its Grinding Machine Division during a week-long open house, March 31 to April 4. Shown publicly for the first time, the plant provides increased capacity for the production of Norton's complete line of 45 different types of precision grinding and lapping machines.

The new plant consists of a 740 x 300-foot factory joining a 360 x 100-foot office building. Among the many features of the new plant are straight-line production methods, new modern machine tools, special materials handling equipment, air-recirculating dust control equipment, and forced ventilation providing three complete air changes per hour.

The 275,000 square foot factory enlarges the company's machine tool manufacturing capacity by about 50 per cent. Supplies and raw stock are now received at one end of the plant and progress through the five 60-foot bays toward the final assembly floor and shipping area. It is estimated that

handling distances have been reduced 50 to 90 per cent.

A new industrial 277-volt lighting system, designed jointly by Norton and Westinghouse engineers, provides an average of 40 foot candles at the factory floor and 60 foot candles in the office.

Hand trucking of materials between machines has been reduced to a minimum, with much of the materials handling now being done by floor operated cranes supported on craneways independent of the building structure.

Also included in the plant is a 15,000 square foot mezzanine which houses locker rooms, wash rooms, a power sub-station and miscellaneous rooms. A modern cafeteria equipped to handle 386 people at one sitting has been included.

Power consumption approximates 2,000 KW per hour. All steam, electricity and telephone service is supplied from the main plant, about a half mile away.

Current employment in the Grinding Machine Division is about 1,500, 400 more than were employed prior to the expansion.



New \$6,000,000 expansion of the Grinding Machine Division of the Norton Company, Worcester, Mass.

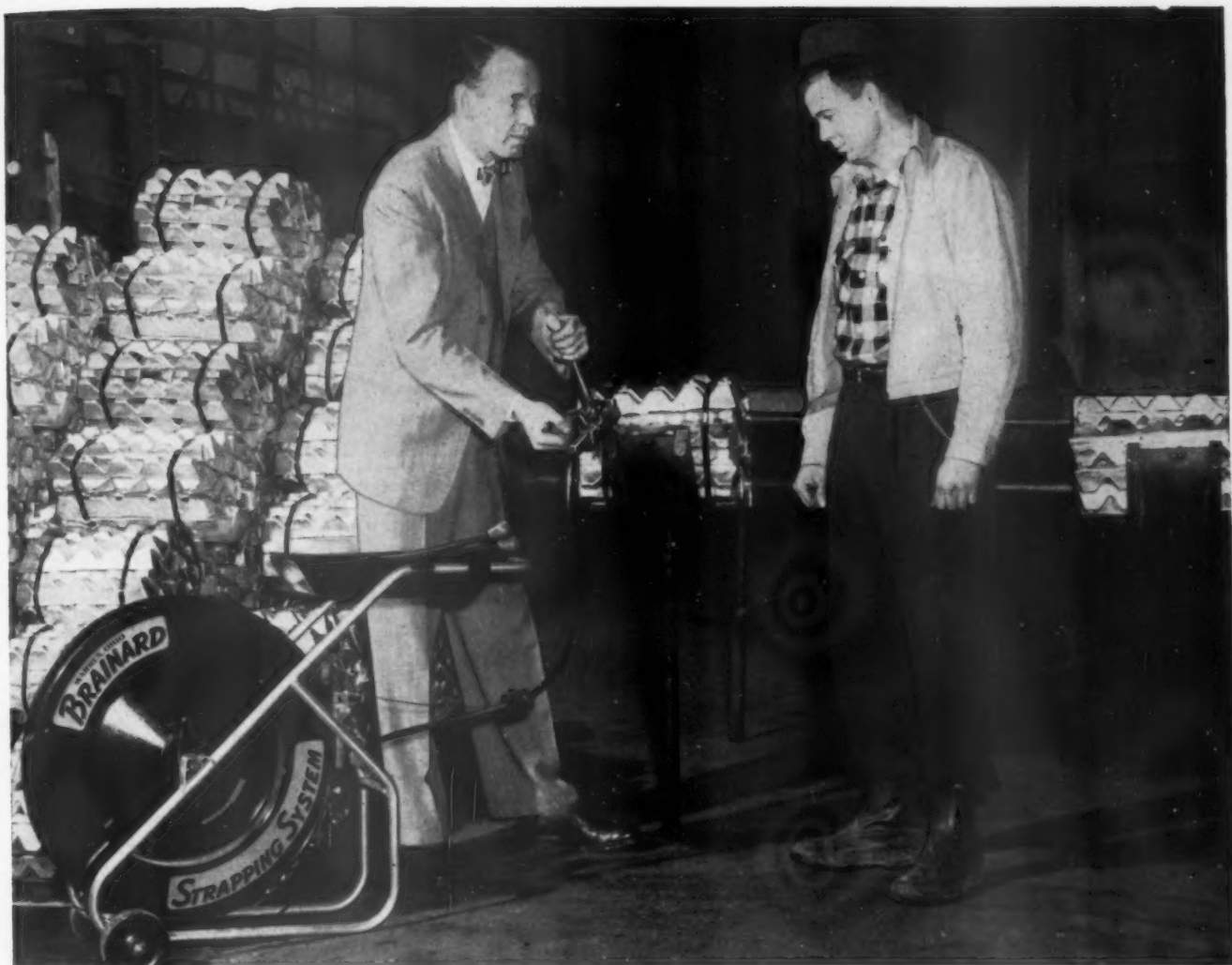


Photo at ALAN-BARR ALUMINUM CO., INC., Palmyra, Pa.

cuts handling costs 20% with Brainard Strapping Service

BEFORE salesman Bob Stuart of Harrisburg put *Brainard service* to work, these aluminum ingots were stored and shipped loose.

Then Bob, working with his customer's materials-handling engineer, helped develop a more efficient method. The ingots are now emptied directly from the furnace into special cradles on a conveyor belt. The cradles are designed so that unit loads, of 28 ingots each, can be strapped with Brainard heavy-duty strapping while still on the conveyor line. Then the unit loads are

palletized and strapped, ready for fast handling by lift trucks.

Bob's ideas and experience paid off—labor costs are down 20%, less storage space is required, and customers are pleased with the palletized loads.

Ask your Brainard salesman *now* for recommendations—Brainard service can lower costs and boost efficiency in your materials-handling and shipping operations. Brainard offices located throughout the U. S. In Canada: Brainard Steel Canadian Division, Toronto.



COMPLETE STEEL STRAPPING SERVICE,
LIGHT AND HEAVY-DUTY STRAPPING,
TOOLS AND ACCESSORIES

Write for illustrated catalog, Brainard Steel Division, Sharon Steel Corp., Dept. FF-5, Griswold Street, Warren, Ohio.



STEEL STRAPPING

HOT OFF THE PRESS and



1953 Edition



PNEUMATIC TOOL CATALOG



DRILLS



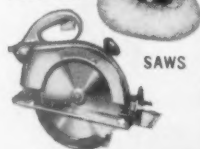
SCREWDRIVERS



GRINDERS



POLISHERS



SAWS



SANDERS

Yours free—the new, info-packed MALL catalog showing the very latest pneumatic tools available. It's a MUST for your reference file. Send for it today and get all the facts about the world-famous MALL line of completely modern pneumatic production tools... a size and style for every need.

**Get Your
FREE COPY NOW!**

MU-23

MALL TOOL COMPANY

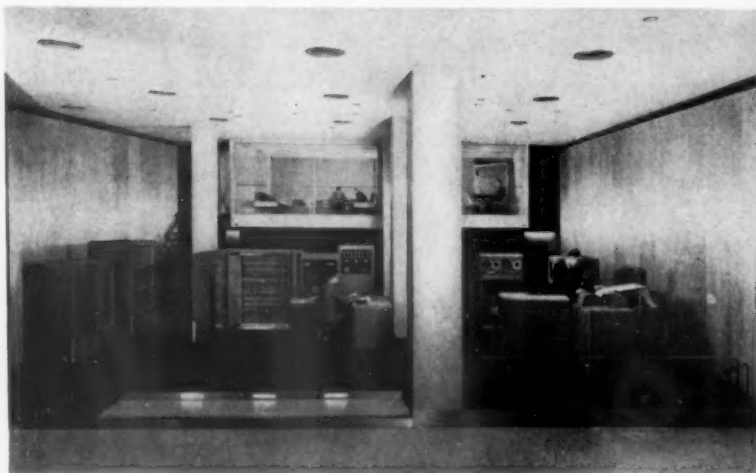
7791 S. Chicago Ave. Chicago 19, Ill.

RUSH me a free copy of the 1953 MALL Pneumatic Tool catalog.

Name _____

Firm _____

Address _____



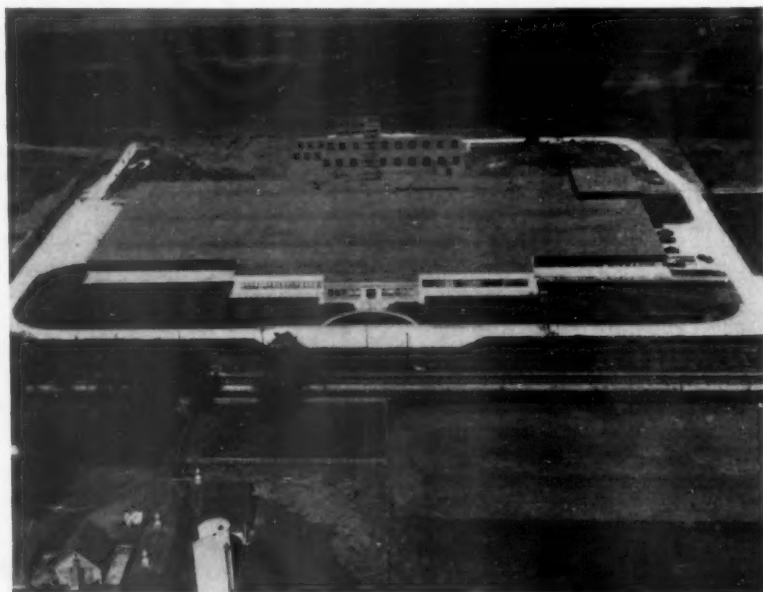
IBM's new 701 high-speed calculator, recently installed in the company's headquarters in New York City. In the center of the units, above, is the Electronic Analytical Control Unit, and at its right is a card reader. The Power Distribution Unit is behind the control unit.

International Business Machines Corporation has announced the installation of the first production model of its newest and most powerful high-speed electronic calculator, the "701", at its world headquarters, 590 Madison Avenue, New York City. Designed to shatter the time barrier confronting technicians working on vital defense projects, the 701 is being manufactured at IBM's Poughkeepsie, N. Y. plant. Composed of 11 compact and connected units known as IBM Electronic Data Processing Machines, the 701 is the first calculator of comparable capacity to be produced in quantity. A dozen or more will be built this year, all consigned to government agencies or defense industries.

The calculators, which will rent for \$11,900 monthly, or more, depending

upon storage capacity, will be used for the calculation of radiation effects in atomic energy; for aerodynamic computations for planes and guided missiles, including vibration and stress analysis; design and performance computations for jet and rocket engines, propellers, landing gear, radomes; on studies related to the effectiveness of various weapons, and on steam and gas turbine design calculations.

The 701 has at least 25 times the overall speed but is less than one-quarter the size of IBM's Selective Sequence Electronic Calculator, which was dismantled to make room for its speedier successor. The 701 is capable of performing more than 16,000 addition or subtraction operations a second, and more than 2,000 multiplication or division operations a second.



FIVE MORE ACRES OF FLOOR space have been added to the productive capacity of the Industrial Division of Gould-National Batteries, Inc., with the opening of the \$3 million plant at Kankakee, Ill., the company's 21st in the United States and Canada.

Meehanite castings have been solving design and engineering specification problems for high property, high quality materials during the past 25 years. In this period, the name has become synonymous with quality, dependability and uniformity—all three characteristics being essential both to the designer and manufacturer of a product.

When you specify Meehanite castings for the component parts of any piece of equipment, machinery or machine tool, you are provided a true assurance that both design and production specifications will be met regularly and repeatedly.

The case histories related in the advertisements reproduced are typical of the wide fields in which Meehanite castings are used and their versatility in meeting engineering needs.

The information acquired from the casting service records of the more than 100 Meehanite foundries all over the world are available to help you solve your casting problems.

For complete property data and detailed information as to how and why Meehanite castings are better castings, write for The Handbook of Meehanite Metals.

SUCCESSFUL APPLICATION EXPERIENCE

with Meehanite castings to aid you in solving design and specification problems.

Take YOUR Casting Problem To A MEEHANITE FOUNDRY

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The American Laundry Machinery Co. Rochester, New York
Atlas Foundry Co. Detroit, Michigan
Banner Iron Works St. Louis, Missouri
Barnett Foundry & Machine Co. Irvington and Dover, New Jersey
E. W. Bliss Co. Hastings, Mich. and Toledo, O.
Builders Iron Foundry Providence, Rhode Island
Compton Foundry Compton, Calif.
Continental Gin Co. Birmingham, Alabama
Crawford & Doherty Foundry Co. Portland, Oregon
The Cooper-Bessemer Corp. Mt. Vernon, Ohio and Grove City, Pa.
De Laval Steam Turbine Co. Trenton, New Jersey
M. H. Detrick Co. Newark, N. J. and Peoria, Ill.
Empire Pattern & Foundry Co. Tulsa, Oklahoma
Farrel-Birmingham Co., Inc. Ansonia, Connecticut
Florence Pipe Foundry & Machine Co. Florence, New Jersey
Fulton Foundry & Machine Co., Inc. Cleveland, Ohio
General Foundry & Manufacturing Co. Flint, Michigan
Greenlee Foundry Co. Chicago, Illinois
The Hamilton Foundry & Machine Co. Hamilton, Ohio
Hardinge Company, Inc. New York, New York

Hardinge Manufacturing Co. York, Pennsylvania
Johnstone Foundries, Inc. Grove City, Pennsylvania
Kanawha Manufacturing Co. Charleston, West Virginia
Keehring Co. Milwaukee, Wisconsin
Lincoln Foundry Corp. Los Angeles, California
London Concrete Company, Ltd. Brantford, Ontario
E. Long Ltd. Orillia, Ontario
Otis Elevator Co., Ltd. Hamilton, Ontario
Palmyra Foundry Co., Inc. Palmyra, New Jersey
The Henry Perkins Co. Bridgewater, Massachusetts
Pahlman Foundry Co., Inc. Buffalo, New York
Rosedale Foundry & Machine Co. Pittsburgh, Pennsylvania
Ross-Meehan Foundries Chattanooga, Tennessee
Shenango-Penn Mold Co. Dover, Ohio
Smith Industries, Inc. Indianapolis, Ind.
Standard Foundry Co. Worcester, Massachusetts
The Stearns-Roger Manufacturing Co. Denver, Colorado
Troy Engineering & Mfg. Co. Allentown, Pennsylvania
Valley Iron Works, Inc. St. Paul, Minnesota
Warren Foundry & Pipe Corporation Phillipsburg, New Jersey

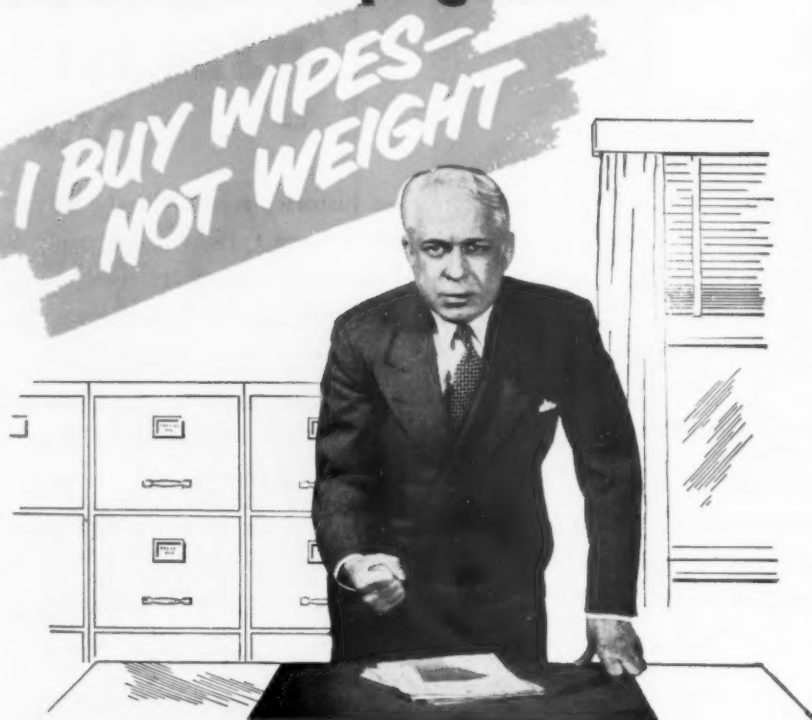
This advertisement Sponsored by Foundries listed above.

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New Rochelle

New York

with **KEX** wiping towels...



Because Every Square Inch is Usable—and
KEX Industrial Wiping Towel Rental Service...

- Is more economical
- Supplies towels that are safe to use
- Simplifies handling
- Saves man hours
- Better equips our men
- Relieves me of shopping around
- Is a national service I can depend on
- Is available to all my plants



For complete information see your
Classified Telephone Directory for nearest
Kex distributor, or write Kex National Service,
295 Fifth Avenue, New York 16, N. Y.

"KEX" NATIONAL SERVICE

REG. U.S. PAT. OFF.



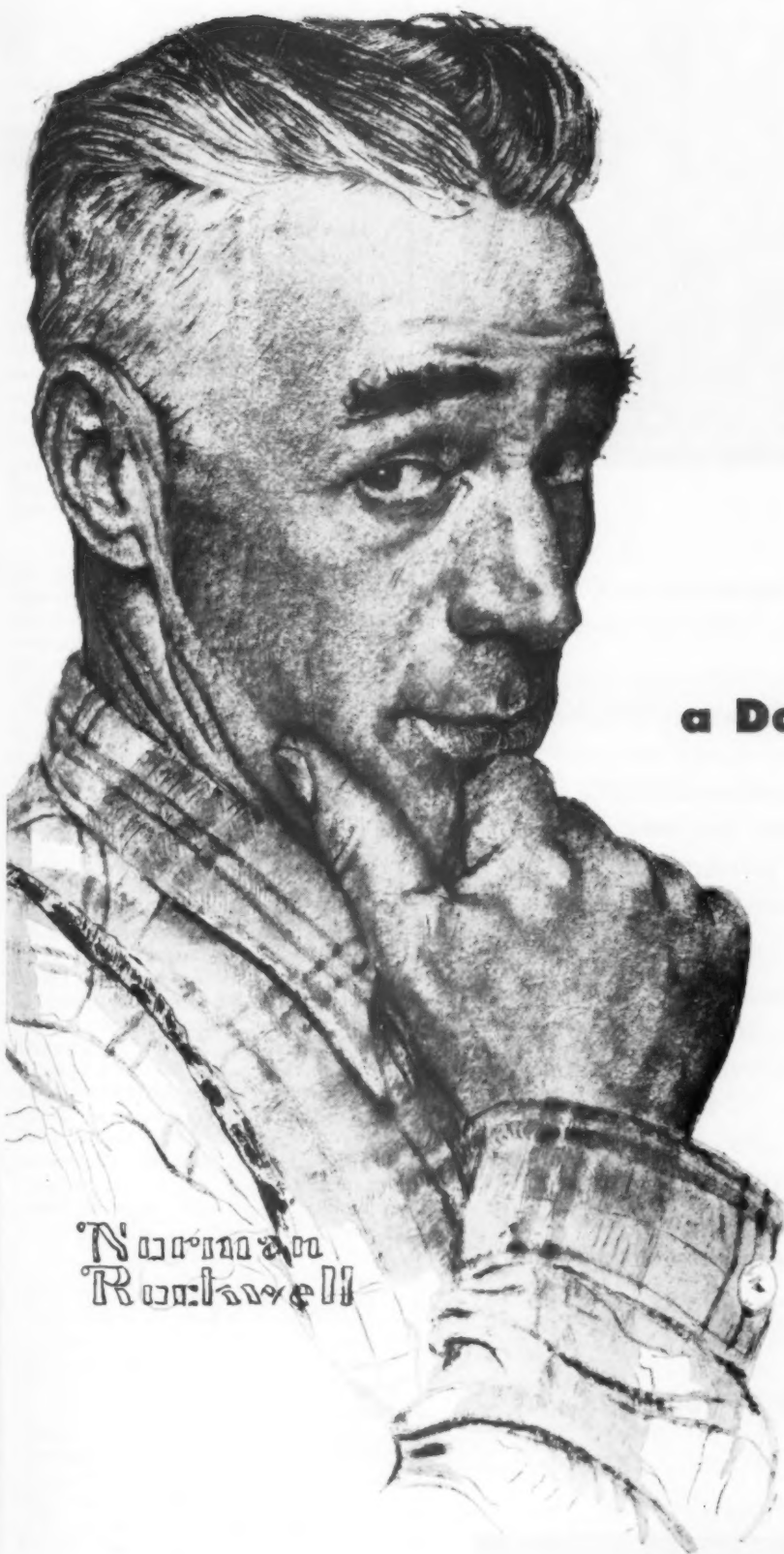
It isn't Kex unless it's imprinted with the Kex name

Joseph T. Ryerson & Son, Inc., Chicago, Ill., has begun construction of a completely new and much larger steel service plant for the firm's operations in Milwaukee, Wis. The new building will be located on property at South 84th Street and the Milwaukee railroad, and will replace the present plant at 320 South 19th Street. The new plant will consist of two large building units and office building, and will have approximately 166,000 square feet of floor space. This will be about three times the present plant capacity. The plant will be heated to preserve and protect the finish of special quality steels. Much new equipment for cutting and handling steel will be installed, including a powerful high speed friction saw for cutting structural steel shapes, an electric eye machine for flame cutting heavy steel plate, and new plate shearing equipment. The new plant is scheduled for completion early in 1954.

The H. A. Pietsch Company, 894 Heckler Drive, Pittsburgh, Pa., has been formed to handle engineering and sales of equipment for commercial and industrial heating, air conditioning, processing and combustion in the area of Western Pennsylvania, Eastern Ohio and West Virginia. The company was formed by H. A. Pietsch, who was chief engineer of the heating department of the Dravo Corporation for more than 18 years. The company will represent several nationally known manufacturers, including the United States Air Conditioning Corporation, Minneapolis, Minn., and the National Heater Company, St. Paul, Minn.

Federal Electric Products Company, Newark, N. J., has announced a complete reorganization of its administrative structure in line with current expansion of manufacturing facilities in Newark, Cleveland, Ohio, and Dallas, Texas, and construction of new plants in Scranton, Pa. and Los Angeles, Calif. Five self-contained divisions are being set up with administrative offices located in various parts of the United States. The new divisions are Panel-board Division, with headquarters in St. Louis, Mo.; Industrial Control Division, with headquarters to be announced later; Switch and Panel Division, with headquarters in Newark; Switchgear Division in Scranton, and Western Division in Los Angeles.

The Joseph Dixon Crucible Company, Jersey City, N. J., has launched an expansion program to increase its importance in the powdered metallurgy field. The company has formed a subsidiary corporation, Dixon Sintaloy, Inc., 535 Hope Street, Stamford, Conn., which is equipped with the most modern pressing, die-making and laboratory control facilities available. A wide range of steel, semi-steel and iron alloys together with high quality non-ferrous alloys of many types are now in the production stage.



You?...

a Doubting Thomas?

IF YOU'RE a man who has to be shown, we're right in your corner. Just give Roebling "Blue Center" Steel Wire Rope one try...see for yourself how it saves time and costs you less on the job.

Two out of three wire rope users in the industrial field prefer Roebling rope. Call the nearest Roebling office for a Field Man to suggest the best ropes for your purposes.



ROEBLING



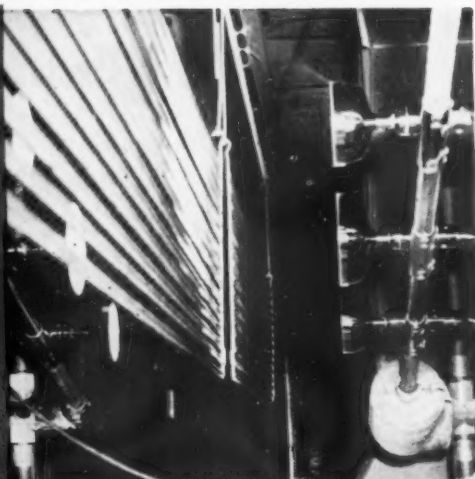
A subsidiary of The Colorado
Fuel and Iron Corporation

JOHN A. ROEBLING'S SONS CORPORATION, TRENTON 2, N. J. BRANCHES: ATLANTA, 934 AVON AVE. • BOSTON, 51 SLEEPER ST. • CHICAGO, 5525 W. ROOSEVELT RD. • CINCINNATI, 3253 FREDDONIA AVE. • CLEVELAND, 13225 LAKEWOOD HEIGHTS BLVD. • DENVER, 4801 JACKSON ST. • DETROIT, 915 FISHER BLDG. • HOUSTON, 6216 NAVIGATION BLVD. • LOS ANGELES, 5340 E. HARBOR ST. • NEW YORK, 19 RECTOR ST. • ODessa, TEXAS, 1920 E. 2ND ST. • PHILADELPHIA, 230 VINE ST. • SAN FRANCISCO, 1740 17TH ST. • SEATTLE, 900 1ST AVE. S. • TULSA, 321 N. CHEYENNE ST. • EXPORT SALES OFFICE TRENTON 2, N. J.

**PAINT MILEAGE
STEPPED UP**

250%

**with the
Ransburg
NO. 2
PROCESS**



The Graber Company in Middleton, Wisconsin, uses the Ransburg No. 2 Process to good advantage in the production of curtain rods and drapery hardware.

● Using an automatic spray finishing system, the Graber Company formerly finished 750 to 1,000 feet of curtain rod per gallon of paint.

● NOW, with the unmatched efficiency of the No. 2 Electro-Spray Process, 3,500 feet of rod are painted with one gallon of paint . . . an increase of 250% over the former automatic spray method. Too, they are getting a more uniform coating with practically no rejects. Maintenance and clean-up time is only one-third of former needs.

● If your production volume justifies conveyORIZED painting, we invite your inquiry to permit evaluation of the savings which can be yours. Conservatively, Ransburg No. 2 Process will produce from 25% to 75% more pieces per gallon than any other spray finishing system. Efficiency is even greater when compared to conventional hand spray methods. Write for our brochure containing data and detailed information on other installations.

Electrostatic Painting Processes

RANSBURG ELECTRO-COATING CORP.

Indianapolis 7, Indiana

RANSBURG

Copper and Brass Sales, Inc., Detroit, Mich., has purchased the American Brass and Copper Company in Oakland, Calif. A new corporation has been formed and will operate in Oakland as the American Brass and Copper Company. Warren I. Grimmer, who has been sales manager for several years for Copper and Brass Sales' Detroit and Cleveland warehouses, will be in charge of the new operation as vice president. The entire personnel of the acquired company is being retained.

Harrisburg Steel Corporation, Harrisburg, Pa., has acquired Heckett Engineering, Inc., Butler, Pa., and its wholly owned subsidiary, Heckett International, Inc. This is another step in diversifying the activities of Harrisburg Steel. Boiardi Steel Corporation, Milton, Pa., was acquired by Harrisburg Steel in September, 1951. Heckett Engineering, Inc. and Heckett International, Inc. will continue as before, with the same officers of these corporations continuing their management.

Air Reduction Sales Company has begun delivery of oxygen to industrial customers from its recently completed plant in Butler, Pa. The plant supplies oxygen directly by pipeline to the Armco Steel Corporation and Pullman Standard Company, for use in the processing of steel. The plant, which operates continuously, has a rated capacity of 100 tons of liquid oxygen per day. Argon and nitrogen will also be produced at the plant.

The Pesco Products Division of **Borg-Warner Corporation**, Cleveland, Ohio, has concluded an agreement with the Dexter Folder Company, Pearl River, N. Y., for the purchase of Pesco's supercharger business, including all manufacturing, sales, engineering and service facilities. Dexter will transfer Pesco's supercharger facilities to a new division to be known as Miehle-Dexter Supercharger Division, located in Racine, Wis., and all of its products will be manufactured by the Christensen Machine Company of Racine, which is a wholly owned subsidiary of Dexter Folder Company.

E. F. Houghton & Company, Philadelphia, Pa., has begun construction of a new plant for the manufacture of synthetic rubber packings, and has formed a subsidiary company for this purpose. The new plant, already in production, is being operated as Houghton Vix-Syn Company, 140 Washington Street, South, Hopkins, Minn. It covers 12,000 square feet and includes space for further expansion as needed. William F. MacDonald, president of E. F. Houghton & Company, is also president of Houghton Vix-Syn Company. The sale of Vix-Syn rubber packings and custom moulded rubber products will be handled by E. F. Houghton & Company.

welding jobs with this little machine

with the big brain ↓

HERE'S ALL YOU NEED
RIGHT AT THE WORK

Welding Head

Net Weight 40 lbs.

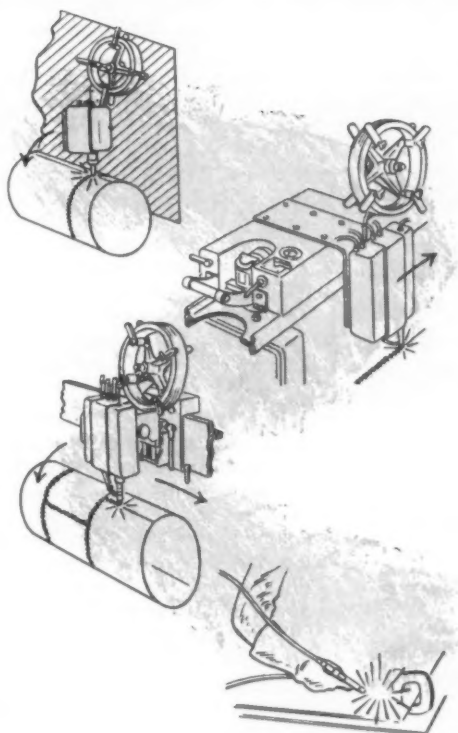
It houses wire drive, wire-straightening device,
water-cooled cup, wire guide tube
and holder

It handles 1/32, 3/64, 1/16, 3/32, welding wires



LINDE'S dependable electronic voltage control unit.

LINDE'S SWM-3 IS FLEXIBLE



USE IT IN A STATIONARY POSITION

Set up the welding head on a wall, post, or vertical bracket . . . Move the work to be welded beneath it. You can use the SWM-3 for many jobs in this position—it will handle four different sizes of welding wire.

GIVE IT MOTION

Mount the welding head on the OXWELD CM-37 tractor-type machine carriage . . . The SWM-3 will make longitudinal welds in cylinders, or butt, lap, and fillet welds in aluminum and stainless or carbon steels.

COMBINE BOTH SETUPS


It's just as easy to mount the SWM-3 on the OXWELD OM-48 side beam carriage: Use it for making longitudinal welds in any part. Stop the unit, revolve the work, and you can make circumferential welds in the same part—without changing the setup.

OR, USE IT MANUALLY

By adding an adaptor, you can use the SWM-3 with your sigma hand welding torch. It becomes a flexible drive unit to help you handle all of your other jobs that do not lend themselves to mechanization.

Ask LINDE to tell you more about the SWM-3 . . . There's a good chance that it will help you do one of your present welding jobs better, easier, faster, and cheaper. Telephone or write the nearest LINDE office today.

LINDE AIR PRODUCTS COMPANY

A Division of Union Carbide and Carbon Corporation
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Offices in Principal Cities

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ALL HANDS ARE "SKILLED HANDS"

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With Ansul Extinguishers near-expert results are obtained by inexperienced operators. In fact, all Ansul Extinguishers are designed to provide a maximum of extinguishing effectiveness in the hands of inexperienced personnel.

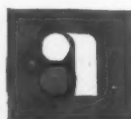
This feature, plus benefits listed below, account for the outstanding preference for Ansul Equipment by fire protection men in all phases of American industry.



Send for File No. 841. You will receive a variety of helpful printed matter. Included is our latest catalog which describes Ansul Extinguishers of all sizes — from the small Ansul Model 4 to Ansul Piped Systems and Ansul 2000 lb. Stationary Units.

1. Water-tight construction throughout.
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3. Quick, positive puncture operation.
4. Special cartridge guard protects cartridge . . . rugged construction throughout.
5. Ansul "PLUS-FIFTY" Dry Chemical used exclusively.
6. Corrosion resistant construction throughout.
7. Greater fire-stopping power.
8. Field tested by thousands of satisfied customers.

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IN THE U. S. A., CANADA AND OTHER COUNTRIES



ANSUL
Chemical Company

FIRE EQUIPMENT DIVISION • MARINETTE, WISCONSIN

MANUFACTURERS OF DRY CHEMICAL FIRE EXTINGUISHERS, INDUSTRIAL CHEMICALS, SPECIAL CHEMICALS, REFRIGERANTS AND REFRIGERATION PRODUCTS • DISTRIBUTORS OF DU PONT "FREON" REFRIGERANTS

The Indiana Glass Company, Dunkirk, Ind., has purchased a controlling interest of the Sneath Glass Company, Hartford City, Ind., from Earl W. Merry II of Westmont, N. J., who had just previously bought the stock interest. Operations will resume as soon as possible at the Sneath Glass Company works, which was closed last September by a strike.

Eutectic Welding Alloys Corporation, Flushing, N. Y., recently announced a new, patented process for cutting and piercing stone, cement, concrete and refractory materials developed by its ChemoTec Division. Manufactured under the trade name "DynArc," the new process uses an arc rod for the first time upon non-conductive material and without a ground connection. The DynaTrode creates its own arc. It requires no ground and does not have to be struck upon metal. The arc, which will operate in mid-air as well as it will upon stone, resembles a flame in appearance, and has all the characteristics of a super torch flame from five to eight inches in length. The DynArc process may be used wherever a DC welding machine is available of 250 amp. or more capacity. A conventional welding machine and a supply of DynaTrode rods are all the equipment required.

Crouse-Hinds Company, Syracuse, N. Y., will complete a building expansion program this year which will add a total of 180,000 square feet to present manufacturing facilities. The program was started in 1946, with the first phase being completed in 1950, when a 74,000 square foot building was constructed to house new screw machine and general machining departments as well as new pattern and tool making shops. The second phase, two new buildings totalling 61,000 square feet, was completed last year. The final phase, construction of a new 45,000 square foot foundry, will be completed by next Fall.

Machine Tool Company, Detroit, Mich., has announced the formation of a separate division to manufacture and market a line of industrial chemical products which have been under development at Michigan Tool Company for the past several years. The new division will be known as the Shear-Speed Chemical Products Division and will have headquarters and sales offices at 7125 E. McNichols Road, Detroit 12. A factory building in Detroit has been acquired and installation of equipment is underway.

Independent Pneumatic Tool Company, Aurora, Ill., changed its corporate name to Thor Power Tool Company, effective March 17, in line with a recent vote of stockholders. The new name utilizing the Thor trademark will eliminate confusion and facilitate easier recognition of the company's products.

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important than
ever to you...**



Fast LOCAL delivery



Convenient LOCAL warehouses



On-the-spot LOCAL lubrication engineering

Standard's LOCAL Lubrication service

• Wherever you are located in the Midwest, there's a Standard service-supply center close at hand. That means prompt delivery of Standard products, immediate assistance from a Standard lubrication specialist.

There's no need to worry over possible production delays due to lack of the right cutting oil, lubricant, or fuel... no need to stock-pile these supplies in your

own plant... no need to wait for help in solving your lubrication problems.

To take advantage of Standard's time-saving *local* lubrication service (now more important than ever to you) call the

Standard office in your area. Or write:
Standard Oil Company
(Ind.), 910
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Standard office in your
Standard Oil Company
South Michigan
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STANDARD OIL COMPANY



(INDIANA)

Here's METAL EDGE Packaging AT WORK in 2 typical Industries!

UNTANGLING A CABLE SALES PROBLEM!

This sturdy M.E. box has a double value in the highly competitive auto after-market. Specially-designed dispensing slot eliminates cable waste due to tangling ... fresh, clean appearance (thanks to Celolustre finish) impresses dealers with brand name.



STREAMLINING WELDING ROD SALES!

This M.E. Box replaced a bulky, 50-pound welding rod package, made retailing in small quantities more efficient. Special dispenser construction allows rods to be removed individually by the welder, while remainder are protected.

Metal Edge—the engineered method—designs packaging to solve specific problems for the leaders in over 100 American industries.

NATIONAL METAL EDGE BOX CO.

PACKAGING • MATERIALS HANDLING • INVENTORY CONTROL

1214 Callowhill Street, Philadelphia 23, Pa.



Diamond Alkali Organic Chemicals Division, Inc., a subsidiary of **Diamond Alkali Company**, Cleveland, Ohio, has announced four new personnel appointments. Dr. L. Gordon Utter, formerly plant pathologist for Phelps Dodge Refining Corporation, has been placed in charge of all technical service work covering the company's line of organic agricultural chemicals, with headquarters in Newark, N. J. Albert F. Fuchs, formerly manager, Insecticide Division, Naco Fertilizer Company, becomes assistant sales manager. H. E. Meadows, formerly with Forest Chemical Products Company, has been appointed Southwestern technical sales representative, with headquarters at Houston, Texas. Charles L. Troph has been transferred from the Industrial Chemical Staff of the Chicago, Ill. office to expand the sales of Diamond's organic chemicals in the North Central States. He will continue to make his headquarters in Chicago. L. J. Polite, Jr., of the Newark office, has been made an assistant sales manager in the Northern territory.

Shell Chemical Corporation, New York City, has just brought on stream a new epichlorohydrin plant in Houston, Tex., which assures the nation of an ample supply of epichlorohydrin for both present and future needs. A part of the new epichlorohydrin production will be tied in with the expansion of Shell Chemical's facilities for manufacturing Epon resins, which are now in tight supply and will remain so until next Fall when Shell Chemical brings in its new bis-phenol and Epon resin plants at Houston.

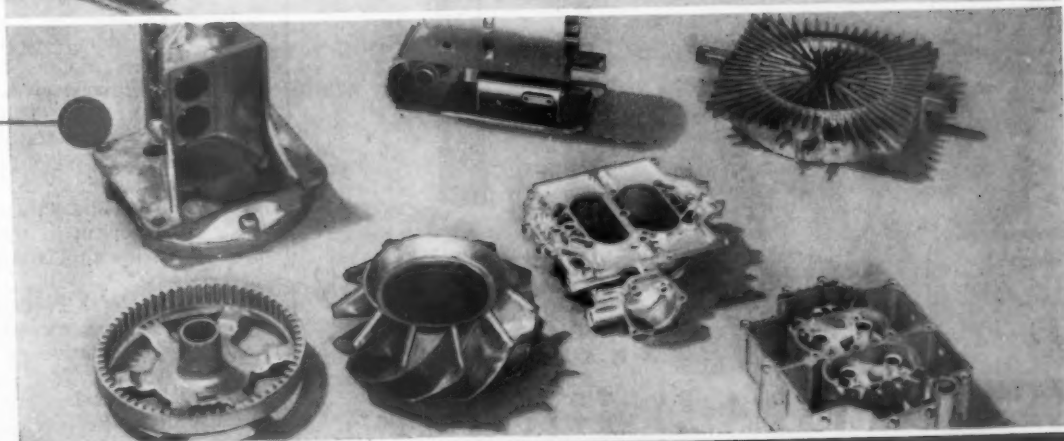
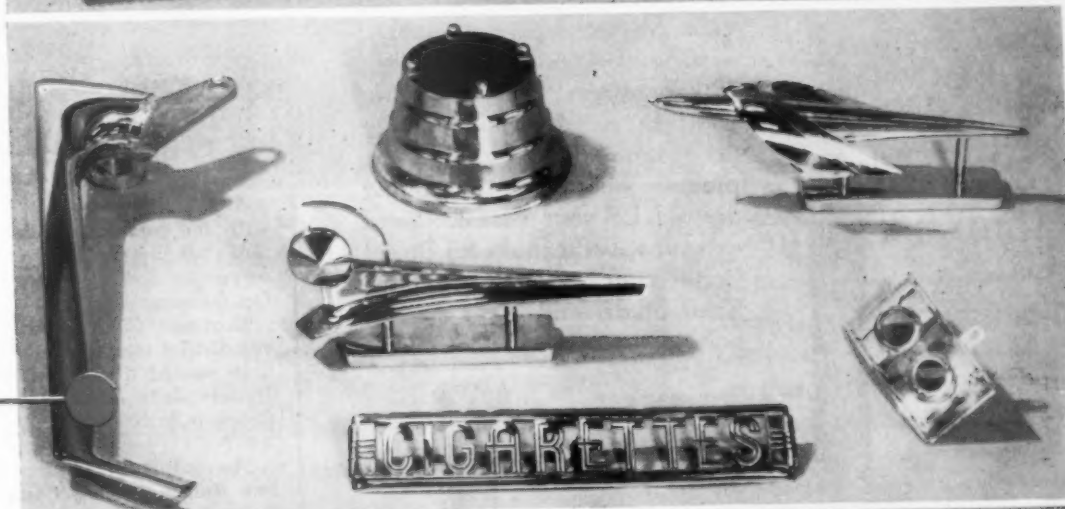
NEWS OF YOUR SUPPLIERS

Raybestos-Manhattan, Inc. has moved from 445 Lake Shore Drive, Chicago, Ill., to its newly constructed office and warehouse building at 6010 Northwest Highway, in the same city.

Boston Woven Hose & Rubber Company, Boston, Mass., has appointed John J. Bolger sales office manager, a newly created post. In this position, Mr. Bolger will strengthen customer relations, expedite deliveries, and establish efficient controls for servicing inquiries and orders from customers and company personnel. Mr. Bolger has been with the company 12 years.

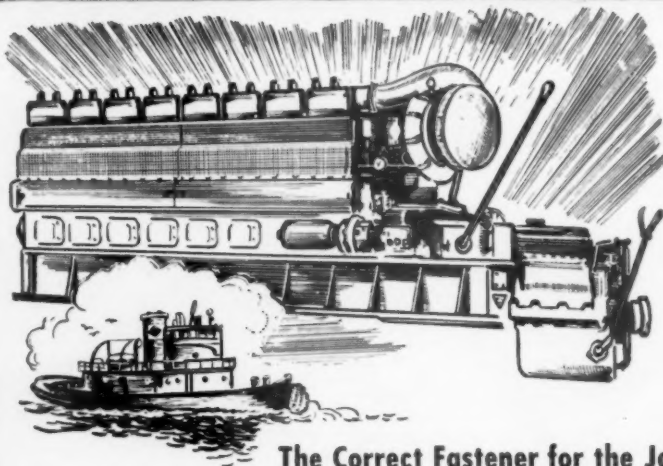
M. G. Manker has been appointed district sales manager of **Copperweld Steel Company**, Steel Division, Warren, Ohio, district sales office, located at 803 Loew Building, Syracuse, N. Y. The Syracuse sales office covers all of New York State, except the metropolitan New York area, in addition to Erie, Warren and Crawford Counties in Pennsylvania.

CASTINGS *for Profit*



... put your problem to **PRECISION** *and get the answer!*

For **DEPENDABILITY** IN **DIESEL ENGINES**



The Correct Fastener for the Job

For over 38 years Erie has manufactured bolts and studs to the specifications of Diesel Engine builders. This specialized experience gained in working with leading Diesel designing engineers assures you of getting the exact materials and the precise tolerance in bolting desired for your Diesel. Send us your specifications for Diesel Connecting Rod Bolts, Cylinder Head Studs, and other special bolting.



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ERIE • PENNSYLVANIA

STUDS • BOLTS • NUTS
ALLOYS • STAINLESS
CARBON • BRONZE

Representatives in Principal Cities.

Firth Sterling, Inc., McKeesport, Pa., and A. Milne & Company, have combined their operation in the state of Ohio to provide improved service to the retail tool steel trade in that area. Stocks of both Firth Sterling's and Milne's brands of steel will be distributed from A. Milne & Company warehouses in Cleveland and Dayton, Ohio, and Pittsburgh, Pa. Firth Sterling business in other than retail tool steel will be handled as in the past through Firth Sterling branch offices in Cleveland and Dayton.

Kaiser Aluminum & Chemical Sales, Inc., Oakland, Calif., has named Howard C. Holmes assistant general sales manager, with offices in Chicago, Ill. Mr. Holmes formerly was Detroit, Mich., district manager. He has been



Howard C. Holmes

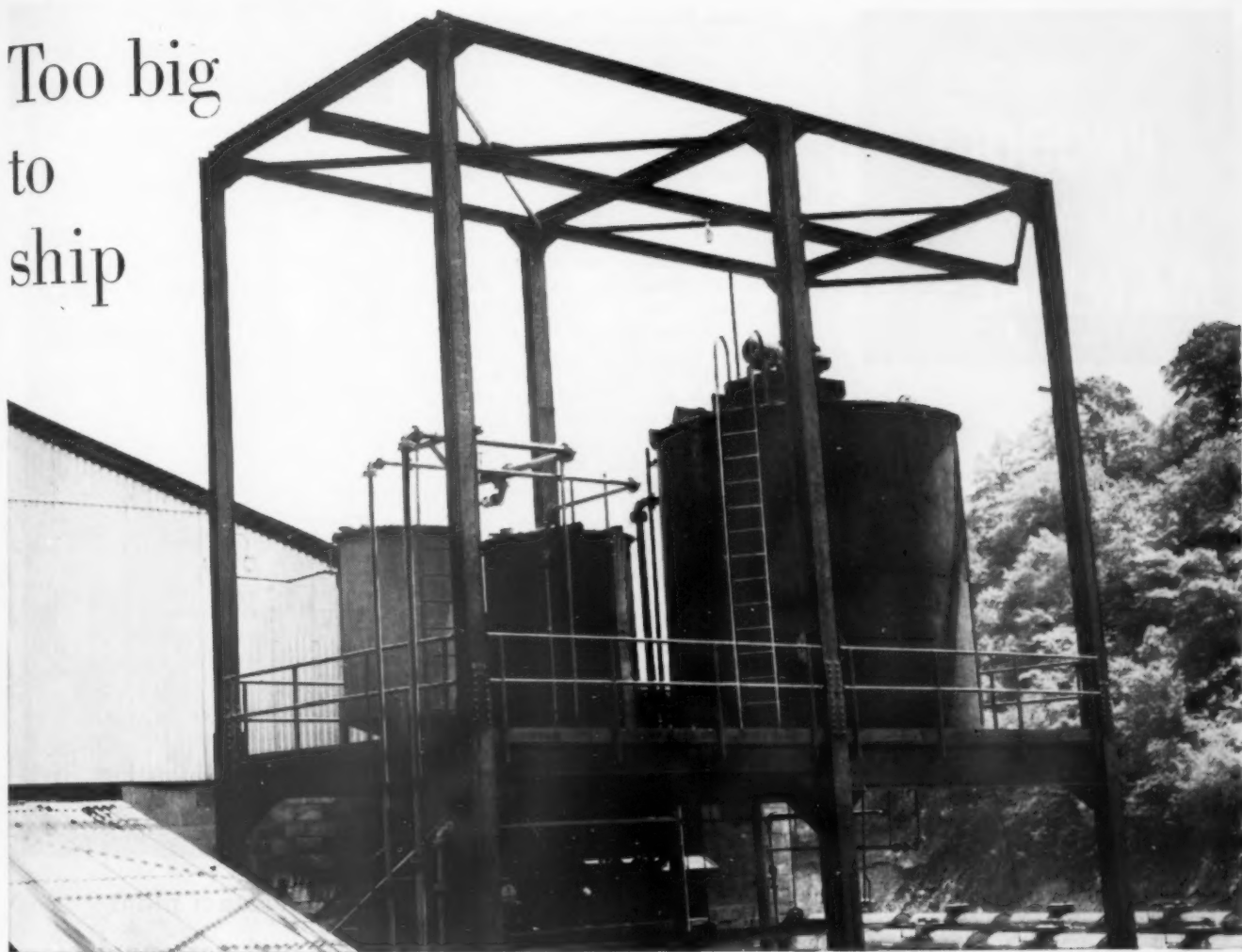
with the company since 1946 and before moving to Detroit in 1951, he served as district manager in Atlanta, Ga. for one year.

Mortimer C. Crockett, former assistant district manager in New York, has been named to succeed Mr. Holmes in Detroit. John J. Cassidy succeeds Mr. Crockett in New York.

The Industrial Division of The Timken Roller Bearing Company, Canton, Ohio, has announced the appointment of Robert G. Morgan to the post of district manager, Moline, Ill. office, and Robert L. Williams to the post of district manager, St. Thomas, Ontario office. Mr. Morgan started work with Timken in 1937, and until recently was district manager of the St. Thomas, Ontario office. Mr. Williams, who succeeds Mr. Morgan in the St. Thomas office, started with Timken in 1938.

Porcelain Metal Products Company, Carnegie, Pa., has named A. F. Petan a sales representative of the firm. In his new position, Mr. Petan will be active in the porcelain enamel sign and architectural porcelain sales field. He will also devote his time to the sales and promotion of porcelain enamel industrial accident prevention signs. H. C. Karadeema will assume the duties of superintendent of the company's enameling department.

Too big
to
ship



so U.S. Permabond[®] protective linings were installed on the spot

EQUIPMENT requiring protection against corrosive attack can be lined with Permabond linings—*right in your own plant*. The above storage tanks in a chemical plant, for example, were too big to be shipped. So United States Rubber Company's Permabond Lining was installed and vulcanized right at the job site—insuring complete protection against the corrosive chemicals stored in the tanks.

This is one more example of the versatility and adaptability of the Permabond process. You can also have it installed *as original equipment* on anything that contains or conveys corrosive materials and chemicals—piping, tanks, valves. And where special conditions occur, a wide range of synthetic Permabond lining stocks is available. Write to the address below.



These hundreds of electrolytic mercury cells producing caustic soda and chlorine are lined with specially compounded Permabond hard rubber lining.



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IN YOUR OWN PRODUCT YOU CAN HAVE A MATERIAL THAT:

- Is molded like a plastic;
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- Will endure 2000°F. for brief periods.
- Can be produced to fine dimensional tolerances;
- Is dimensionally stable;
- Will hold inserts tightly over wide temperature ranges;
- And has plenty of other features.

WRITE for the full story

IN ELECTRONIC EQUIPMENT THAT YOU BUY OUTSIDE YOU CAN HAVE:

More capacity, more capabilities, in less space and with less weight. To get these advantages you must specify Mycalex Tube Sockets*; Mycalex Commutator Plates**; Mycalex glass-bonded mica Insulation.

*Mycalex Tube Socket Corp., Clifton, N. J.

**Mycalex Electronics Corp., Clifton, N. J.



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World's Largest Manufacturer of Glass-bonded Mica Products

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GENERAL OFFICES AND PLANT

123 CLIFTON BOULEVARD, CLIFTON, N. J.

Portable Electric Tools, Inc., Chicago, Ill., has announced several changes in its sales organization. PET has established a branch office at 149 Church Street, New York City, under the direction of Philip G. Fellingner, who will be regional manager for New York, Philadelphia, and New Jersey territory. Mr. Fellingner formerly was with the merchandising department of the B. F. Goodrich Company. PET also opened a branch office for the New England area at 91 Middlebury Road, Watertown, Conn., under the direction of James R. Kielty. Mr. Kielty, who formerly was sales director for Tool Kraft in Springfield, Mass., will be New England regional manager. Effective March 1, PET will be represented in Tennessee, Virginia and the Southeastern part of Kentucky by The Heco Company, with headquarters in Johnson City, Tenn.

Honan-Crane Corporation, Lebanon, Ind., has appointed Walter J. Holder assistant to the general sales manager. Mr. Holder formerly was resident engineer for Honan-Crane in the central New York area. Prior to joining Honan-Crane, he was with the Radiator Division of General Motors at Lockport, N. Y.

Koppers Company, Inc., Pittsburgh, Pa., has announced several changes in its sales personnel. George W. Naylor, head of the Washington, D. C. office for the past two years, has been appointed assistant vice president and assistant sales manager of the Tar Products Division. Donald MacArthur, who has been assistant manager of the central staff sales department, will become the new manager of the company's Washington office. Harry P. Neher, Jr. succeeds Mr. MacArthur as assistant manager of the central staff sales department. Thomas H. Cable has been named manager, sales methods section, the post formerly held by Mr. Neher, and George C. Miller has been named manager, international product sales section, succeeding Mr. Cable.

Inland Steel Company, Chicago, Ill., has announced the transfer of Curtis W. Burr, manager of the order division, to assistant manager of sales in the plate and shape division. John R. Lanan, assistant manager of the business procedures department, replaces Mr. Burr as manager of the order division.

Taft-Peirce Manufacturing Company, Woonsocket, R. I., has appointed Wendell F. Carney New York sales manager, replacing Joseph N. Tellier, who has retired. Mr. Carney was formerly sales manager of the Chicago territory. Frank G. Billmire replaces Mr. Carney in Chicago.

Graybar Electric Company, New York City, has appointed H. E. Lippert district operating manager at Cleveland, Ohio, replacing A. E. Kostulski, who is retiring. Mr. Lippert has been with Graybar since 1932.

KEEP THINGS RUNNING SMOOTHLY
OIL WITH AN EAGLE OILER!



Favorites with machine operators and maintenance men in every industry, Eagle Hydraulic Pump Oilers are positive-acting, easy-to-operate and dependable. There are no pump leathers . . . no soldered connections . . . guaranteed against leakage. They come with rigid straight, rigid angle or flexible spouts in various lengths. All spouts interchangeable.



Protect plant and personnel with **EAGLE SAFETY CANS**

(Listed and labeled by Underwriters' Laboratories, Inc.)



The new Eagle Safety Can is an industrial safety can of convenience and efficiency for handling flammable liquids. Its design includes exclusive Eagle features that make it easy to use and which insure a tightly sealed cap to prevent spilling and leakage when the can is not in use.

Order Eagle Oilers and Cans
from your distributor





FOOTE BROS.

Better Power Transmission Through Better Gears

a matter of confidence

Specialists who designed this speed reducer entrusted production of its bronze worm gear blank to other specialists.

Foote Bros. Gear and Machine Corporation, Chicago, leading producers of Speed Reducers, Gears, and other quality Power Transmission Components for practically any industrial requirement, identify themselves with the phrase "BETTER POWER TRANSMISSION THROUGH BETTER GEARS."

For over twelve years, Foote Bros. have purchased thousands of 1/2 pound to 1500 pound non-ferrous gear blanks from National Bearing Division—confidently entrusting their reputation and industry leadership to special foundry skills for which National Bearing is famous.

And Foote Bros. confidence is well placed.

National Bearing's proven ability to mass produce exceptionally fine-grained, non-ferrous castings, free from blow holes and sand inclusions, can be depended upon under even

the most exacting engineering and manufacturing specifications.

As a typical customer service-plus, National Bearing Division's engineers and foundrymen recently designed, and produced for customers like Foote Bros., a bronze gear blank that contains even higher physical properties.

Through a new foundry technique, National Bearing imparts greater hardness, finer grain, and more tensile strength to the bronze gear blank ring, to a depth below where the teeth are cut. In addition, this new process gives such extra advantages as higher uniformity, closer tolerances, and economy of stock.

If your product requires special mass-produced non-ferrous castings or bearings, National Bearing Division has the foundry facilities, experience, and skill that will insure better product performance, and may possibly lower product costs through production-run economies. You are invited to write to National Bearing Division for complete information.

AMERICAN

Brake Shoe

COMPANY

NATIONAL BEARING DIVISION

4940 Manchester Avenue • St. Louis 10, Mo.

PLANTS IN: ST. LOUIS, MO. • MEADVILLE, PA. • NILES, OHIO • PORTSMOUTH, VA. • ST. PAUL, MINN. • CHICAGO, ILL.



**a BILLINGS
will do it better!**



Skilled hands prove it

Billings COMBINATION WRENCHES—drop forged by experts from Billings Vitalloy® steel—exemplify the highest standards. Open ends give fast, easy “spin-on” of nuts and bolts while the box ends provide a solid grip for two-fisted pressures needed to set ‘em down tight. Accurately machined openings, clearly marked—polished heads and heavy chrome finish *plus* Billings skill in drop forging, make Billings Combination Wrenches the tools craftsmen use with confidence and pride.

**Other Billings Vitalloy
Forged Wrenches**



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BILLINGS
Industrial Distributors.

BILLINGS
WRENCHES & SHOP TOOLS
INDUSTRIAL FORGINGS SINCE 1869

THE BILLINGS & SPENCER CO. HARTFORD 1, CONN. U.S.A.

Roth Rubber Company, Chicago, Ill., has announced the appointment of Emil O. Jensen as vice president in charge of sales. Mr. Jensen joined Roth as general manager three years ago, having previously been with Elkay Manufacturing.

Graton & Knight Company, Worcester, Mass., has moved its Chicago, Ill. office from 164 North Wacker Drive to 546 Washington Boulevard, Chicago 6, Ill. The office continues under the management of Arthur M. Norris, district manager.

Clark Equipment Company of Buchanan, Battle Creek and Jackson, Mich., has named Dan Stearns manager of its newly-created Midwestern region, with headquarters at 310 South



Dan Stearns

Michigan Avenue, Chicago, Ill. Glen R. Johnson, who for the past six years has been one of Clark's national account representatives, will assist Mr. Stearns in management of the new sales region.

Lyle B. Schueler has been elected vice president in charge of sales of the **Diamond Power Specialty Corporation**, Lancaster, Ohio.

Sprague Electric Company, North Adams, Mass., has appointed Allan J. Weinberger manager of its Dayton, Ohio, application engineering office. Mr. Weinberger formerly was section head of the Test Devices Division of the U. S. Naval Ordnance plant at Indianapolis, Ind. He succeeds William M. Lana, who has been transferred to the Sprague office at Culver City, Calif., as assistant sales manager.

L. William Sessions has been assigned to the St. Louis, Mo. branch office of **Monsanto Chemical Company's** Organic Chemicals Division. John K. Lilly, of the company's Cleveland, Ohio, branch office, succeeds Mr. Sessions in the division's pharmaceutical sales department in St. Louis. David H. Bechtold moves from the New York City office to assume Mr. Lilly's sales duties.

NO BETTER BLADES OR BANDS

Starrett®

You can't buy better hacksaws, band saws or band knives than STARRETT. They're precision made by the "World's Greatest Toolmakers" in a new streamlined plant to give you a lot more clean, fast, trouble-free cutting. By simply specifying STARRETT blades or bands you can count on better, faster production—less cost—less time out for blade changing... whether you cut, saw or slice.

STARRETT

FAST-KUT

NO HANDIER SOURCE OF SUPPLY

Your Industrial Distributor

Because your local industrial distributor stocks and sells the complete Starrett line, you can always count on prompt, dependable, quality service. He'll gladly suggest the one best, most economical blade or band for your cutting operations. The complete line includes hacksaws for hand or power cutting — band saws for cutting metal, wood, plastics, contour cutting, friction sawing, etc. — and band knives for cutting soft or fibrous materials.

GUIDES TO BETTER CUTTING

Write for the Starrett Hacksaw and Band Saw Catalog and Quick Reference Metal Cutting Guide. Address Dept. P.



Starrett

SINCE 1880

WORLD'S GREATEST TOOLMAKERS



THE L. S. STARRETT COMPANY
Athol, Massachusetts, U. S. A.

MECHANICS' HAND MEASURING TOOLS AND PRECISION INSTRUMENTS
DIAL INDICATORS • STEEL TAPES • PRECISION GROUND FLAT STOCK
HACKSAWS, BAND SAWS and BAND KNIVES

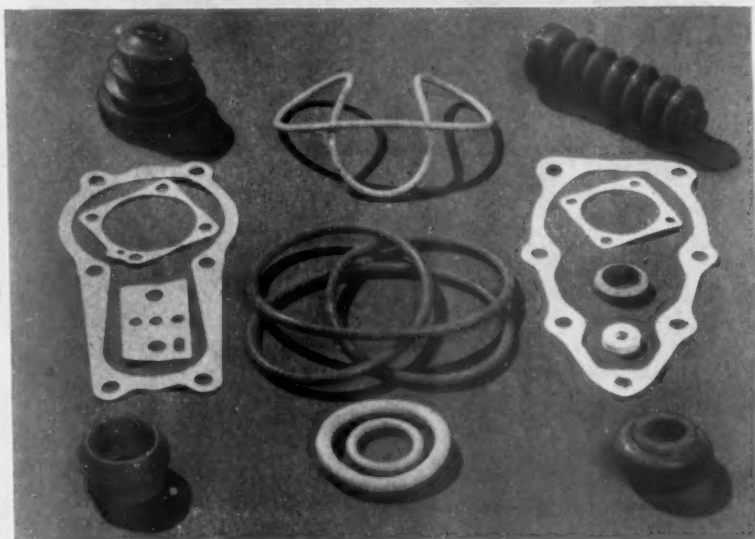
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INDUSTRIAL
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Prompt delivery
Dependable service
Quality products

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With new compounds being developed almost weekly by manufacturers of basic polymers, today's Silicone rubber molded parts are performing faultlessly in vital applications where Silicone of less than a year ago could not be considered.



Remaining resilient at extreme temperatures (-100°F to $+500^{\circ}\text{F}$) today's Silicone stocks have greatly increased tensile strength, far better compression set results, and other vastly improved properties such as — excellent stability after long exposure to ultra-violet rays, prolonged weathering, fungus growth, many oils and a variety of chemicals. They also have excellent dielectric properties and water repellency. They bond well to metal, and are stainless and odorless.

Acushnet's Silicone rubber seals, gaskets, "O" rings, packings, diaphragms and numerous other parts are custom engineered to meet the toughest specifications.

Acushnet
PROCESS COMPANY

Send for the Acushnet Rubber Handbook, a comprehensive rubber data reference.



Address all communications to 770 Belleville Ave., New Bedford, Mass.

Boston Woven Hose & Rubber Company, Boston, Mass., has named Charles W. Kline New England division manager. Mr. Kline, who has been with the company 17 years, will be responsible for the entire New England sales force.

Otto Schmidt has been named Midwestern drill unit sales representative for the Delta Power Tool Division, Rockwell Manufacturing Company, Pittsburgh, Pa. Mr. Schmidt, who has been with the Delta Power Tool organization since 1928, formerly was district sales manager in Chicago. In his new post he will specialize in drilling and tapping problems. He will make his headquarters at 817 Forest Road, La Grange Park, Ill.

The formation of a new Southwest District with headquarters in Tulsa, Okla., has been announced by the Republic Rubber Division, Lee Rubber and Tire Corporation, Youngstown, Ohio. W. T. Willey, formerly field representative in Houston, Texas, has been appointed district manager of the new district. Other members of the new sales organization who will be responsible for sales and service, are R. J. Cravens, who will headquarter in Dallas, Texas, D. L. Cushing in Houston, and R. E. McQuiston in Midland, Texas.

A. D. Steinbach and Sons, Inc., New Haven, Conn., has appointed A. J. Gross manager of New York sales, with headquarters at 247 Park Avenue, New York City. Mr. Gross formerly was advertising production manager of Remington Rand Inc.

The Lau Blower Company, Dayton, Ohio, has appointed Edward V. Sullivan sales manager of its fan division. Thomas H. Martin has been named manager of advertising and sales promotion, the post formerly held by Mr. Sullivan.

Alloy Precision Castings Company, Cleveland, Ohio, has appointed Harry I. Dixon New England representative. Mr. Dixon has been active in the metallurgical field for more than 25 years.

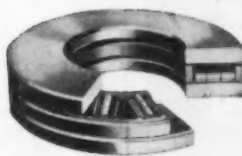
Erie Resistor Corporation, Erie, Pa., has organized an industrial sales department within its Electronics Division. E. S. Willis, sales representative for Western New York, Pennsylvania, and Northern Ohio, has been appointed to head up the new department. The department will coordinate sales efforts involving all companies except those which primarily manufacture radio and television home receivers, radio and radar equipment for the U. S. government, of component parts.

Hyster Company, Portland, Ore., has appointed R. E. Brooks Company of Hasbrouck Heights, N. J., as dealers in Hyster industrial truck equipment. The machinery firm has signed an exclusive sales and service agreement with Hyster for northern New Jersey.



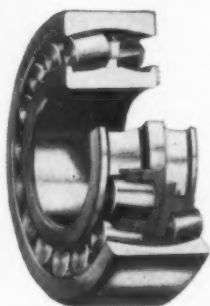
CAM FOLLOWERS

...anti-friction cam rollers with strength to withstand shock loads.



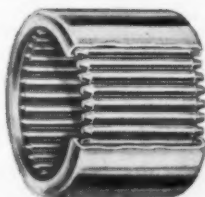
ROLLER THRUST BEARINGS

...handle heavy loads parallel to the shaft axis.



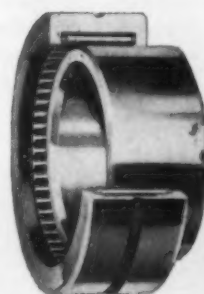
SPHERICAL ROLLER BEARINGS

...Inherent self-alignment allows compensation for shaft deflection or misalignment.



TYPE DC NEEDLE BEARINGS

...for a given load, the most compact anti-friction bearing made.



TYPE NCS NEEDLE BEARINGS

...Heavier carburized races offer more rugged service with maximum wear resistance and long service life.

your bearing distributor has
*the **TORRINGTON BEARINGS** you want...*

it pays to do business with him

When you order Torrington Bearings from your local bearing distributor, you're sure of prompt action. Your distributor can make immediate delivery from his stocks on many types and sizes—*saving you delay that may mean costly downtime.*

If your equipment uses Torrington Type DC or NCS Needle Bearings, Torrington Spherical Roller, Cam Follower or Roller Thrust Bearings—your distributor is the man in your area who *offers you the widest selection.*

His long experience with every type of anti-friction bearing problem is available to you. If you need help with installation or maintenance of your bearings... if you want advice on the choice of bearing types for a special application... he's the man who will be glad to work with you, to provide engineering counsel and efficient service.

THE TORRINGTON COMPANY
Torrington, Conn. South Bend 21, Ind.
*District Offices and Distributors in Principal Cities of
United States and Canada*

TORRINGTON BEARINGS

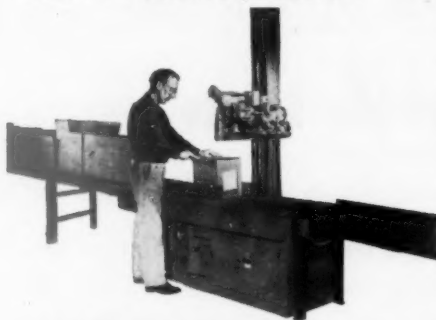
how two companies cut packing costs

Read this if you ship in corrugated or fibre cartons!

It tells how two well known manufacturers cut packing costs . . . by thousands of dollars annually . . . with International Carton-Stapling Machines. Here's the story:



\$28,000 saved by Harrison Steel Cabinet Co., manufacturers of kitchen wall, base and sink cabinets. Harrison improved working conditions . . . doubled production.



\$20,000 saved by Uarco, Inc., manufacturers of business forms. Closing 2,500 cartons formerly took 48 man-hours . . . now it takes 12 man-hours.

40 models...from portable units to big multi-head automatic models. Write for details.

INTERNATIONAL STAPLING MACHINES
INTERNATIONAL STAPLE & MACHINE COMPANY
804 E. Herrin St., Herrin, Illinois

Mueller Brass Company, Port Huron, Mich., has appointed F. F. House sales manager for its Philadelphia, Pa. territory. Mr. House joined the sales staff in 1938, and moved to the Philadelphia territory in 1944.

T. J. Cope, Inc., Philadelphia, Pa., has appointed A. M. Sanson, Jr. sales manager. Mr. Sanson formerly was with the McGraw-Hill Publishing Company in Philadelphia.

H. H. Buggie and Company, Toledo, Ohio, has appointed Jim P. Kay as its Central Western representative. Mr. Kay is president and owner of the Kay Sales Company, Kansas City, Mo. He will cover the states of Missouri, Kansas, Nebraska and the western portion of Iowa.

Westinghouse Electric Corporation, Pittsburgh, Pa., has named James O. Clevenger sales manager of general industrial products. Mr. Clevenger joined Westinghouse in 1927. His most recent position was manager of the welding department at Buffalo, N. Y. In his new capacity, Mr. Clevenger will be located at company headquarters in Pittsburgh.

Pratt & Whitney of West Hartford, Conn., has announced the relocation of its Chicago, Ill. branch office in new, larger quarters with adequate parking for visitors at 4649 West Fullerton Avenue, Chicago 39, Ill. The new building was specially planned and erected for Pratt & Whitney operations. The new office will be under the management of C. G. Cunningham, district manager. F. A. Armstrong is district sales manager for cutting tools and gages.

Boston Woven Hose & Rubber Company, Boston, Mass., has appointed William H. Owen product manager of its Flat Belting Department. Prior to joining the company two and one half years ago, Mr. Owen was a sales engineer with C. O. Bartlett & Snow Company, for five years.

Homer L. Lacock & Associates, sales representatives for Detroit Stamping Company, Detroit, Mich., has appointed William F. Monahan as representative in the Central New York territory. His headquarters will be at 468 Monroe Avenue, Rochester 2, N. Y.

Norman S. Wright & Company, West Coast representative and distributor of "De-Sta-Co" toggle clamps, made by Detroit Stamping Company, Detroit, Mich., has established an office with warehouse facilities at 112 West Jackson Street, Phoenix, Ariz.

Hanna Engineering Works, Chicago, Ill., has appointed The Barton Sales Company, 1609 West Third Street, Fort Wayne, Ind., to handle the sale of Hanna products in Northern Indiana, including the cities of Fort Wayne and South Bend.

For heavy duty industrial use!

Sherman
"Gold Label"
NOZZLES



The patented Non-Rising Sleeve built into the Gold Label Nozzle eliminates up and down movement and wear on the packing — adds extra years of service. Constructed of heavy, genuine bronze with wide, deep knurling on the barrel. For rugged, industrial service at low cost you can't beat the "Gold Label" nozzle.

WRITE FOR CATALOG TODAY

H.B. Sherman
MANUFACTURING CO.

BATTLE CREEK,
MICHIGAN

INDUSTRIAL BRASS FITTINGS

GEAR RACKS

**STRAIGHT
AND SPIRAL**
*Generated for
Extreme Accuracy*
**IMMEDIATE
FACILITIES
AVAILABLE**

For both Production and
Small Lots send us your
inquiry

No Obligation

ESTABLISHED 1908
BRAUN GEAR COMPANY
240 Richmond St. Brooklyn 8, N. Y.



Steak was really "rare" in the 90's

At the turn of the century the "butcher's wagon" was a familiar sight. For many rural families it was their only meat market.

Electric refrigeration has revolutionized food marketing, but equally important are the benefits to public health. Now, you can keep your steaks in the "pink condition" for one day or fifty-two weeks, as you choose.

The volume production of dependable and efficient Emerson-Electric Hermetic Motors has been a con-

tributing factor in making modern refrigerators and food freezers economically sound investments for millions of Americans.

Leading makers of motorized products for the farm, home, business and industry depend on Emerson-Electric's 62 years of motor building experience. For information on this complete line of standard motors in ratings from 1/20 to 5 h.p., and hermetic motors from 1/8 to 20 h.p., write:

THE EMERSON ELECTRIC MFG CO., St. Louis 21, Missouri

MODERN LIVING IS POWERED WITH ELECTRIC MOTORS

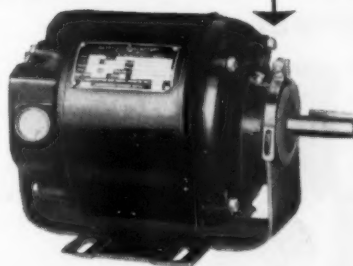
EMERSON-ELECTRIC'S unique

Twin-gineering

SERVICE

solves your power problems

Our engineers are eager to work with yours in designing and providing the correct motor for contemplated new or improved appliances or equipment. "TWIN-GINEERING" saves costly engineering "back-tracking," and may suggest short cuts and product improvement. Write today for Bulletin No. 418.



EMERSON
MOTORS • FANS



ELECTRIC
APPLIANCES

LEADERS IN THE MOTOR AND FAN INDUSTRY SINCE 1890

MAY, 1953

Please mention **PURCHASING Magazine** when writing to advertisers.

373

ELECTRO *xtra* DYNAMIC *dependable*

INDUSTRIAL MOTORS



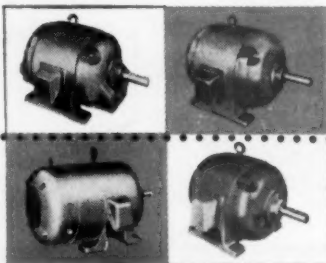
Every Electro Dynamic motor is built with
EXTRA INSULATION in stator slots and between phases
EXTRA IMPREGNATIONS and bakings of the
wound stator
EXTRA HIGH-FREQUENCY TESTING
of insulation between turns

From 1 to 250 Horsepower (N. E. M. A. STANDARDS)



WRITE TODAY FOR
CATALOGUE
NO. 563

One-piece
cast iron
frames.



Extra large
"free-flo" air
channels.

Permanently
aligned cast
iron brackets.

Liberal size
grease lubri-
cated bearings.

Also a complete line of Direct Current motors and generators

ELECTRO  DYNAMIC
DIVISION OF GENERAL DYNAMICS CORPORATION
BAYONNE, NEW JERSEY

Air Reduction Sales Company, New York City, has appointed D. E. Dallman manager of the Minneapolis, Minn. district, replacing the late M. M. Weist. Mr. Dallman has been with the company for 18 years and, until his recent appointment, was assistant district manager in Minneapolis.

Hy-Pro Tool Company, New Bedford, Mass., has announced several sales personnel changes. Francis T. Thorley has been appointed eastern district manager. In the past he has represented Hy-Pro in Massachusetts, Rhode Island, New York and Connecticut. Harry B. Hubbard has been named direct factory representative for Hy-Pro in the state of Connecticut. Earl C. Jex, Jr. has been named direct representative in Michigan, operating out of Hy-Pro's Detroit office.

Stone-Mann Paper Company, Mobile, Ala., has appointed Everett F. Smith sales manager. Appointment of two assistants to Mr. Smith were announced at the same time. They are Edwin V. Taylor and William Heminghaus.

Harry F. Devens and Edward W. Sherman have been appointed assistant sales managers of the Metals Division of **Olin Industries, Inc.**, East Alton, Ill. Mr. Sherman, who joined Olin in 1950, will make his headquarters in New Haven, Conn., and Mr. Devens, also with Olin since 1950, will make his headquarters in East Alton.

Steel Capacity Up In Six Major U. S. Districts During '52

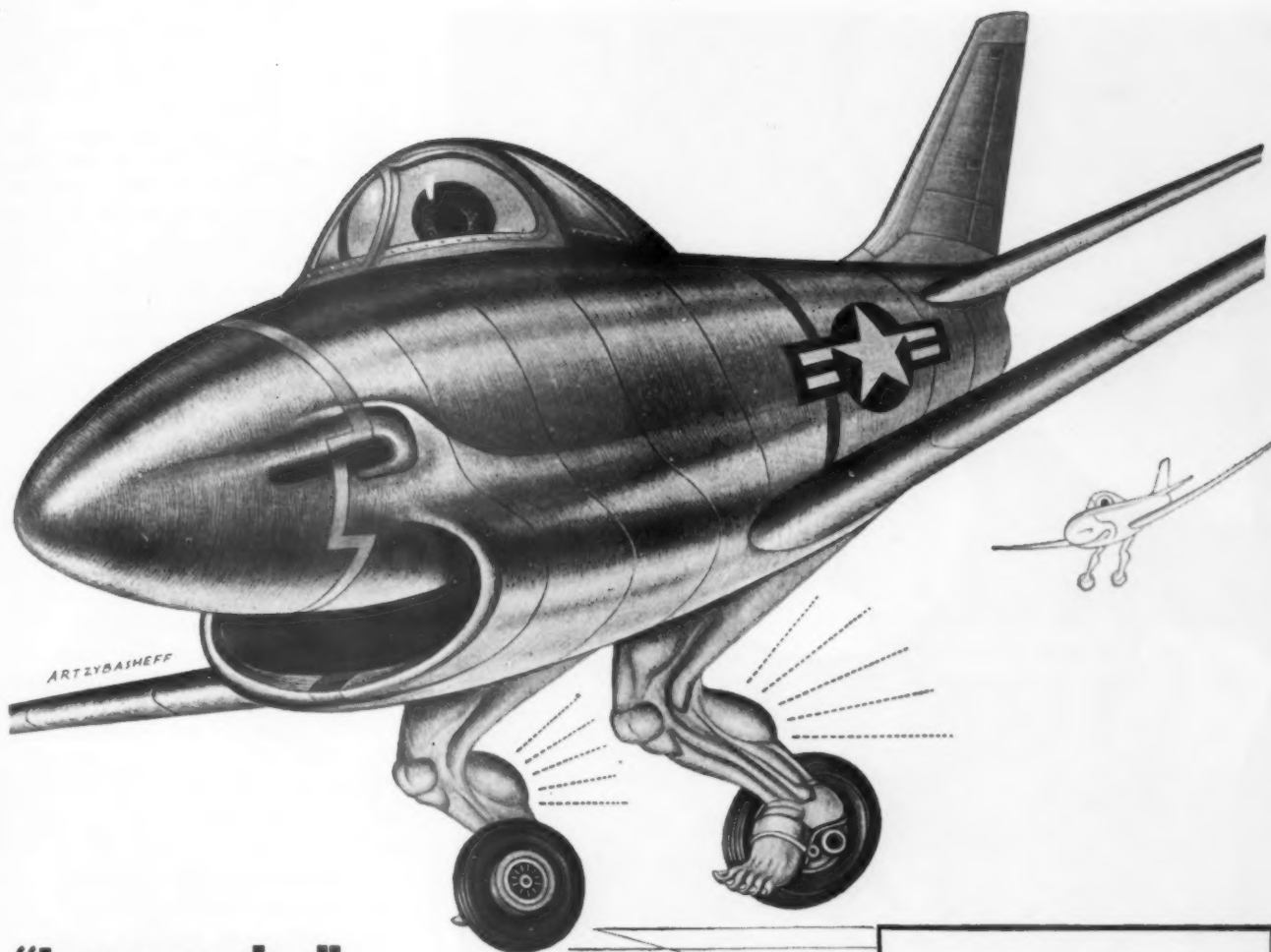
As the steel capacity in this country made its record high annual gain during 1952, the greatest advance in actual tonnage took place in the Chicago district, according to American Iron and Steel Institute. The largest percentage increase was in the Cleveland-Detroit district. The four other major geographical areas also gained.

The Chicago district increase was about 2,702,000 tons, a rise of 12.1% on January 1, 1953, as compared to January 1, 1952. The Chicago district capacity is now 24,960,600 tons, the second highest total of the six major districts.

The Cleveland-Detroit district made a 14.5% increase. Their capacity is now 12,002,900 tons annually. The southern district steel capacity is now 6,036,160 tons, up 14.1% from the start of 1952.

In the eastern district the steel capacity is now 23,863,810 tons, an increase of 2,153,940 tons or 9.9% during 1952. In the western district the capacity is 7,063,000 tons, a rise of 571,100 tons or 8.8%.

The leading steel producing
(Please turn to page 376)



"Leg muscles" that cushion a jet's landing

When the landing gear of an F-86 Sabrejet hits the runway at lightning speed, the shock is absorbed by hydraulic action within the tough, precision-made cylinder on each "leg." To machine these 37-lb. cylinders to exact tolerances from solid 158-lb. steel forgings . . . to give them mirror-smooth inside finishes . . . Cleveland Pneumatic depends on Lycoming.

If your metal-working needs—like Cleveland Pneumatic's can be solved by precision production, or if your problem is volume fabrication, or "just an idea" in the rough or blueprint stage—look to Lycoming. Long famous for metal-working skills, Lycoming meets the toughest specifications of exacting customers, both industrial and military.

Lycoming's 2½ million square feet of floor space, its more than 6,000 machine tools, and its wealth of creative engineering talent all stand ready to serve your needs.

AIR-COOLED ENGINES FOR AIRCRAFT AND INDUSTRIAL USES •
PRECISION-AND-VOLUME MACHINE PARTS • STEEL-PLATE FABRICATION

FOR RESEARCH • FOR PRECISION PRODUCTION

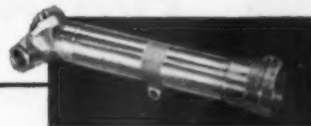
LOOK TO **LYCOMING**

LYCOMING-SPENCER DIVISION
BRIDGEPORT-LYCOMING DIVISION



WILLIAMSPORT, PA.
STRATFORD, CONN.

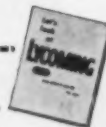
For main leg
cylinders that enable
a Sabrejet to absorb
the jolt of high-speed
landings—Cleveland
Pneumatic looks
to Lycoming's
precision production

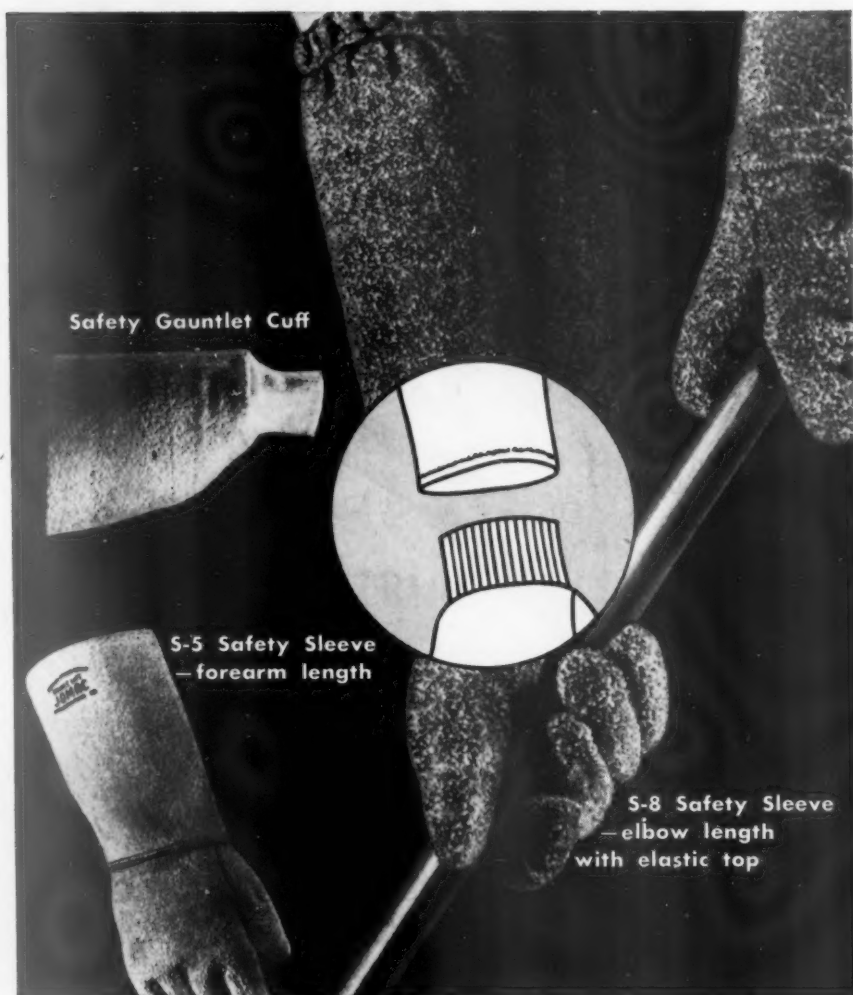


Lycoming-Spencer Division
AVCO Manufacturing Corp.
652 Oliver Street
Williamsport, Pa.

Please send me further information on
Lycoming's varied abilities and facilities.

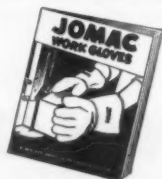
Name _____
Firm _____ Title _____
Address _____
City _____ Zone _____ State _____





BUY JOMAC FOREARM PROTECTION

Why buy expensive gauntlet gloves? Jomac® Safety Sleeves mean better forearm and wrist protection against burns, cuts and lacerations, outwear many pairs of gauntlet gloves, are washable. Write for new illustrated catalog of Jomac Products.



C. WALKER JONES CO., PHILA. 38, PA.

(Continued from page 374)

district, Pittsburgh - Youngstown, achieved an increase of 1,270,240 tons last year. The capacity there is now 43,621,000 tons.

During the past 13 years the largest percentage rise in steel capacity has been in the west, at 223%. This is followed by a gain of 92.7% in the south.

Meanwhile, an increase of about 9,163,000 tons in the steel capacity of the Pittsburgh-Youngstown area is the largest gain in tonnage for any district during that 13-year interval. It is followed by a 7,704,000 tons rise in the eastern district; 7,177,000 tons in the Chicago district; 4,877,000 tons in the western district; 4,103,000 tons in the Cleveland-Detroit area; and 2,905,000 tons in the south.

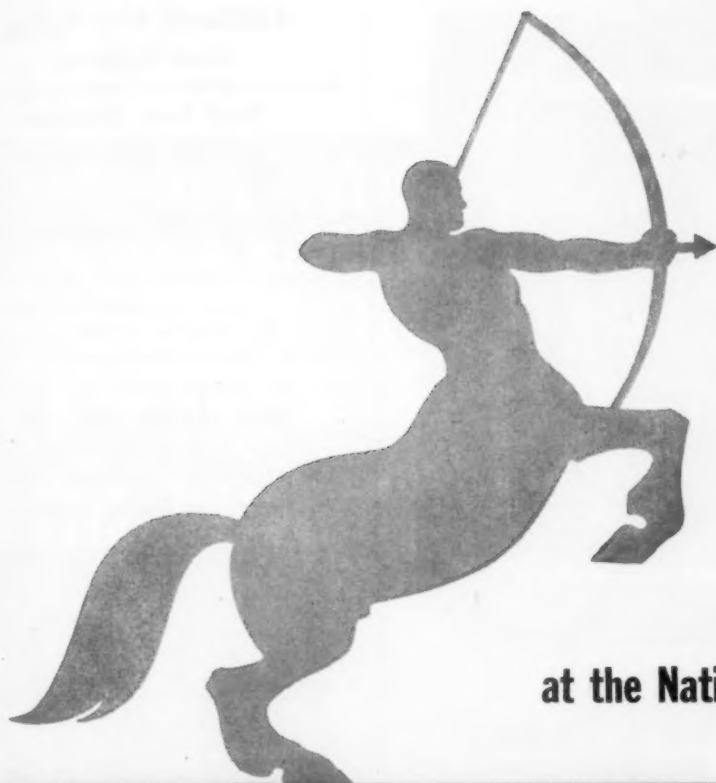
The largest tonnage increase in blast furnace capacity last year took place in the eastern district. The gain was over 2.3 million tons, or 16.7%. This district also made the greatest tonnage increase from the start of 1940 to the beginning of 1953—5,370,000 tons. The greatest percentage increase in the 13 years was 337.7% in the west.

♦ ♦ ♦

Concrete Prefabrication Lowers Building Costs

A 10,000 sq. ft. building was recently constructed for the American Chemical and Potash Corporation at 201 W. Washington Blvd., Whittier, Calif., in less than five working days at a cost of \$6 per sq ft. The building is a T-shaped, single story reinforced concrete structure containing 35 rooms. The \$6 per sq ft cost figure covers only the bare building, including exterior doors, steel sash, glazing, architectural and engineering fees, labor etc. It does not include extensive partitioning and interior finishings such as process pipings, tanks and other laboratory requirements.

The extraordinary job, which sets up a new construction record, was accomplished by combining two of the latest techniques in concrete prefabrication—the "lift-slab" and the "tilt-up" methods, sensationally cutting time and costs. In lift-slab construction, the upper floors and roofs of concrete building are poured on top of each other, pancake fashion, and hoisted into position by jacks. Tilt-up walls are made in stacks the same way and tilted into place between floor and ceiling. Both methods have been used before independently, but this is the first time they have been brought together.



*come
and see us...*

at the National Purchasing Agents Show



Inform-a-Show—Booths 3 & 4
May 24 thru 27
Hotel Statler, Los Angeles.

No matter what type of brass and copper products you buy, you'll want to visit our exhibit at the 1953 Inform-a-Show at Hotel Statler in Los Angeles, May 24-27.

It tells a story of the quality and service for which the Chase Brass & Copper Co. is famous. It shows you the *why* and the *how* of the research that keeps Chase quality on top. It explains the inner workings of our efficient, coast-to-coast network of Chase Sales Offices . . . and shows how that network is always ready to serve you with every Chase product in any quantity—from a box to a boxcar-full.

We hope you'll come and see us at Booths Nos. 3 & 4. And remember, you're always welcome at your nearest Chase warehouse.

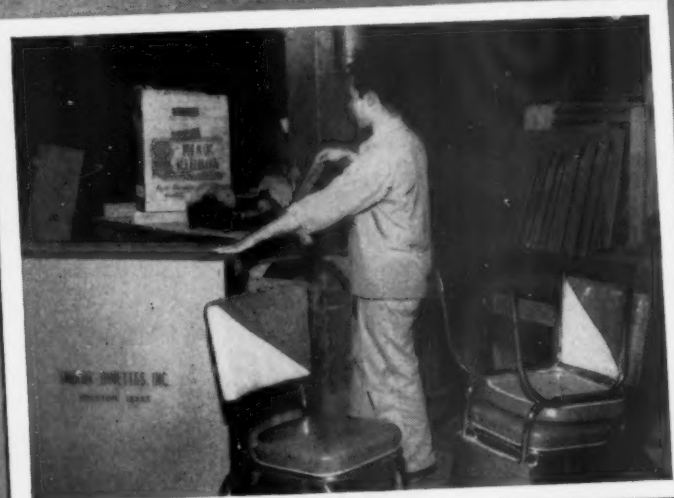
Chase **BRASS & COPPER**

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The Nation's Headquarters for Brass & Copper

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Atlanta	Dallas	Los Angeles	Philadelphia	Seattle
Baltimore	Denver †	Milwaukee	Pittsburgh	Waterbury
Boston	Detroit	Minneapolis	Providence	
Chicago	Houston	Newark	Rochester †	(† sales office only)
Cincinnati	Indianapolis	New Orleans	St. Louis	

case history



CONSISTENTLY SUPERIOR

"Blue Ribbon Tape cut our cost 12½%"

...says Shelby Dinettes, Inc.

"Since we started using Blue Ribbon Tape" writes S. B. Shelby, President of Shelby Dinettes, Inc., "we have cut our taping cost approximately 12½%. We find that Blue Ribbon's sticking ability helps a lot on sealing our large corrugated boxes."

Shelby Dinettes, like many other well known manufacturers, quickly discovered that Blue Ribbon Superstandard Gummed Tape moistens faster . . . forms a stronger permanent bond with one firm sweep of the hand . . . strengthens the carton at the same time it seals out dust and moisture.

Send for booklet showing how you can save money in your shipping room with this stronger time and waste-saving superstandard tape.

Blue Ribbon SUPERSTANDARD GUMMED TAPE

A product of HUDSON PULP & PAPER CORP.

Dept. 29 505 Park Ave., N.Y. 22, N.Y.

SEND FOR FREE BOOKLET

HUDSON PULP & PAPER CORP.

Dept. 29 505 Park Ave., New York 22, N.Y.

Send me without obligation my copy of your helpful booklet, "How to cut costs in your shipping room."

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

Did you know?

Only Gummed Tape
makes cartons
so simple to open!

Gummed Tape combines two important safety features for shippers: (1) it gives positive protection to your shipments en route, yet (2) it is simple to open when your shipments safely arrive. Even though Gummed Tape grips like a bulldog, a sharp blade is all your customer needs to open the cartons. He doesn't risk injury to his hands or his newly acquired merchandise in opening the cartons.

Thus Gummed Tape assures both safer transit and safer unpacking. More than ever it pays to seal with Gummed Tape...the only form of closure that does so much for so little.

Additional Cost Saving Case Histories

Band Saw Improves Slotting Work

A vast improvement is noted by the National Acme Company, Cleveland, in the use of band sawing for precision slotting work. Heavy gage blade is used so that only one cut gives the desired width of slot. A unique feature eliminates the necessity for clamps and hold downs.

COST SAVING ITEM—230

Heavy-Duty Machine Torch Improves Ingot Cutting



The Industrial Forge and Steel, Inc., of Canton, Ohio, makes easy work of cutting operations on huge corrugated ingots by using a two-inch barrel heavy-duty machine torch specifically designed for thicknesses from 24 to 72 inches and above.

Machine gas cutting of a forging slug of specified tonnage from a 52-inch diameter corrugated ingot is accomplished in 35 minutes. Forward speed of the torch, mounted on the arm of a machine carriage, is about 1.5 inches per minute. The uniform rate of progression with this powerful torch insures a smooth, clean cut within reasonable tolerance limits.

COST SAVING ITEM—231

New Lubricant Cuts Repair Parts Bills By 50%

The use of a new lubricant in the worm-gear, hypoid and two speed axles has enabled a transport company to change oil-change periods from 15,000 miles to 40,000 and sometimes more, and has cut repair parts bills 50%. Overhaul periods are stretched from 50,000 to 100,000 miles.

COST SAVING ITEM—232

WHEN YOU FIGURE ELECTRICAL CABLE COSTS

DO YOU FIGURE

ALL FIVE?

All too often electrical cables are purchased solely on the basis of initial cost. Actually, of course, this is only one of five factors to consider . . . and no true cost comparison can be made until the four "hidden" costs are figured.

Here are the four "hidden" costs which often upset your overall budget, particularly when you're trying to "economize":

- installation costs
- maintenance costs
- costs of power shutdowns when a cable fails
- costs of replacing a cable which has failed prematurely.

Okonite cables are the most effective means for combating these costs. A wide range of Okonite cable designs assures you of the most economical installation for any type of operating condition. And for savings throughout the life of the cable, Okonite always uses the premium materials and exclusive processing techniques which deliver unfailing electrical service year in and year out.

We can't condense millions of man-hours of cable research, field engineering and manufacturing experience into a short description of Okonite cables. But your Okonite representative can show you in black and white why the best cables — Okonite cables — really carry the lowest overall cost. The Okonite Company, Passaic, N. J.



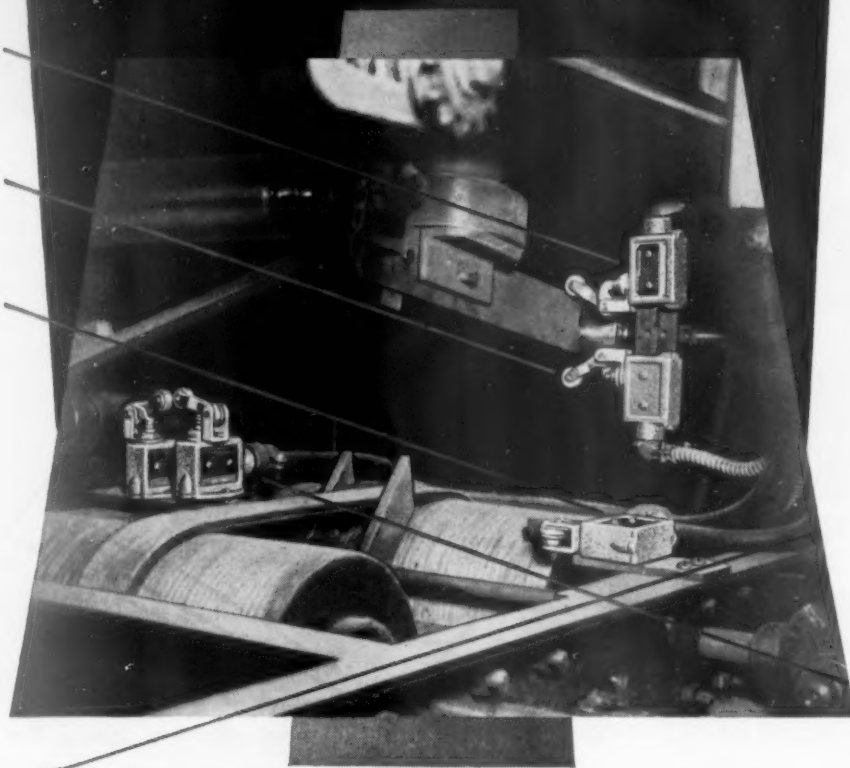
The best cable is your best policy

OKONITE



insulated wires and cables

Six MICRO switches make
this cloth handling
machine more accurate,
more automatic...



To assure the constant tension which is an important factor in cloth handling, plant engineers of the Kendall Mills, Charlotte, N. C. equipped a cloth handling machine with six MICRO switches at strategic points.

These switches operate to maintain the speed of the machine at the same number of pounds stretch per inch width throughout the handling process.

Plant engineers in all lines of industry are finding that the application of one or more of these precise, easily mounted switches is the most practical and economical way to make present equipment safer, more automatic and more productive.

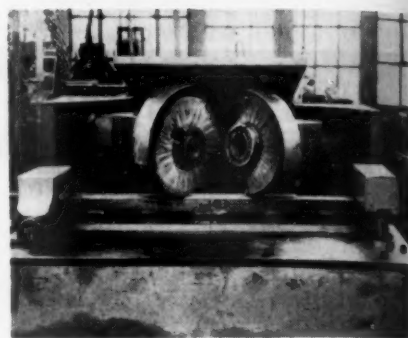
Authorized MICRO distributors are located in over 100 key cities with complete stocks of switches best suited to individual plant requirements. Look for your nearest distributor under "Switches, Electric" in your classified phone book. For more detailed information, help is always available from your nearest MICRO branch office.

For live, practical ideas on switch applications, send for MICRO TIPS. We'll be glad to add your name to our mailing list.

MICRO A DIVISION OF
MAKERS OF PRECISION SWITCHES MINNEAPOLIS-HONEYWELL REGULATOR COMPANY
FREEPORT, ILLINOIS



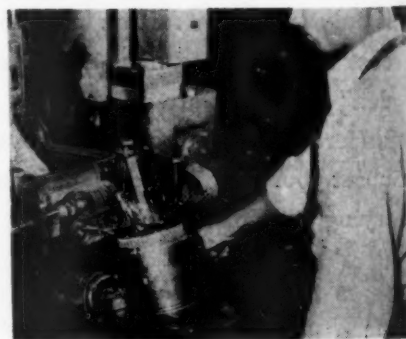
500% Production Increase From New Brushing Method



A new mass production brushing method for deburring and surface blending gear racks is resulting in production increases of more than 500% for American Type Founders, Inc., Elizabeth, N. J. The new method, utilizing power brushes, has cut deburring time on 17-foot gear racks from 50 minutes per unit to less than 10 minutes. The setup provides a completely automatic, gear driven sequence for deburring the gear racks at a speed of five feet per minute. When the entire rack has passed beneath the brushing area, a limit switch reverses both the direction of feed and the rotational direction of the brushes finishing the opposite side of the gear teeth.

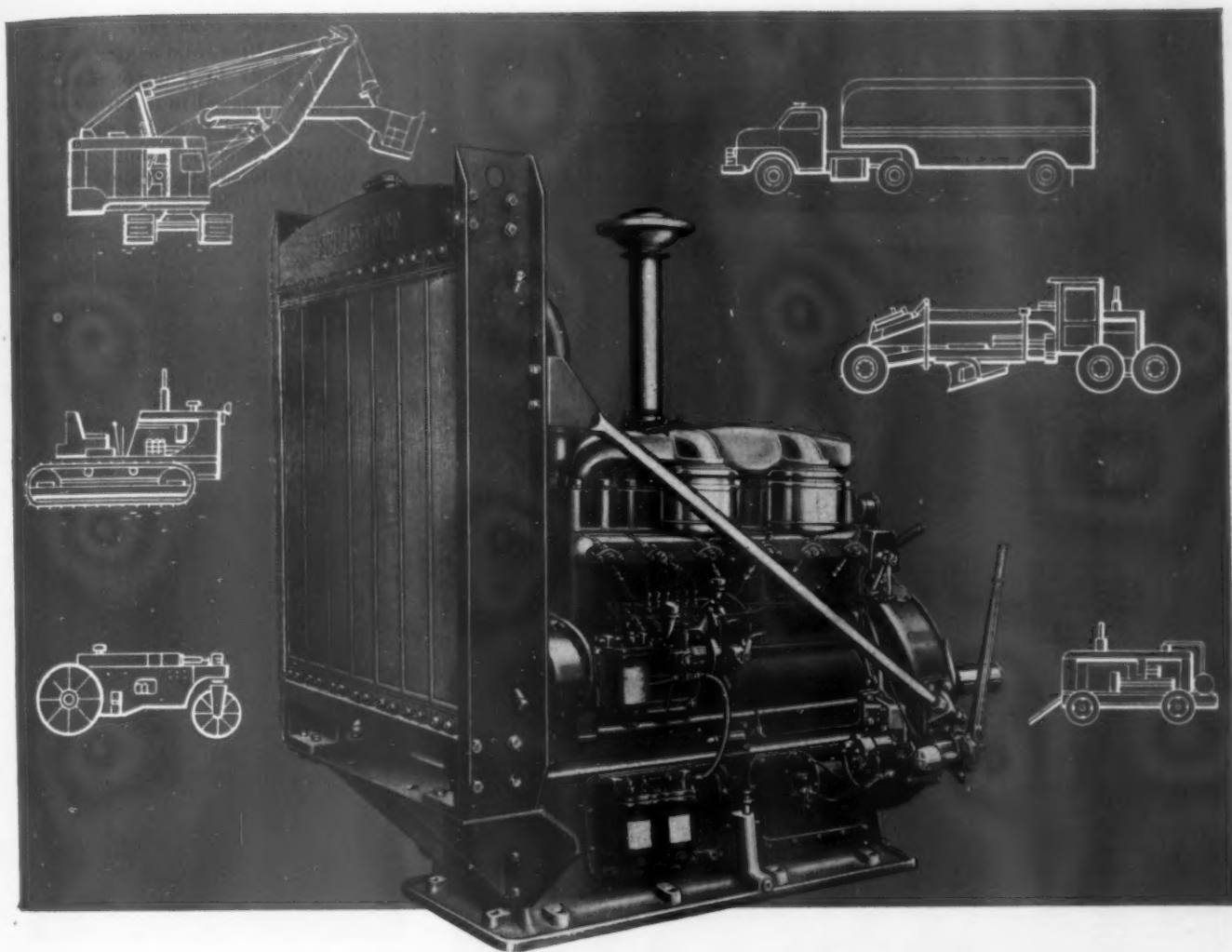
COST SAVING ITEM—233

Power Brushing Speeds Removal Of Fine Wire Enamel Insulation



Large cash savings per production hour for each machine operation have been made possible by power brushing in stripping fine gauge wire used in the manufacture of electric motors. The apparatus consists of a variable speed lathe with an operating range between 100 and 5,000 revolutions per minute, and power driven brushes. The stripping of the enamel insulation from the copper lead wire in the rotor fields

(Please turn to page 384)



Here's Why Hercules Motors Corp. uses *Summerill* Diesel Tubing



Quality-Controlled Summerill Diesel Tubing is formed, ready for use when it leaves our plant.

The Hercules Motors Corp., one of the nation's largest producers of diesel engines, uses Summerill Seamless Tubing *exclusively* for all high pressure lines because they know from experience that it always meets specifications and *never fails*. And you'll find that you can get the same excellent results in your product with Summerill.

For Summerill Diesel Tubing is a quality product at a competitive price. Only prime raw materials are used in its fabrication. Every tube is Quality-Controlled from raw material to finished product and subjected to painstaking inspection before shipment. The result? Each tube is free from radial cracks. In addition, Summerill Tubing has excellent bending and cold forming characteristics and consistently measures up to close-tolerance specifications. • Why not drop us a line outlining your tubing problem? We'll gladly show you how Summerill Diesel, Hydraulic, Pressure, Mechanical, Aircraft or Specialty Tubing can help you reduce costs, eliminate fabrication difficulties and avoid on-the-job tubing failures. Address Summerill Tubing Company Div., Columbia Steel & Shafting Company, Pittsburgh 30, Pa.



W&B 4656

IN COLD DRAWN SEAMLESS STEEL TUBING
SPECIFY *Summerill* AND BE SURE!

Nothing is as smooth as a

HOOVER HONED RACEWAY*



POLISHED. Polished raceway surface magnified 100 times as used in other ball bearings.

* HOOVER HONED. Hoover Honed raceways magnified 100 times as used exclusively in Hoover Ball Bearings.

HOOVER

America's only

BALL BEARING

with Honed Raceways

**longer life
greater load capacity
amazing quietness**



**HOOVER BALL AND BEARING CO.
Ann Arbor, Michigan**

(Continued from page 382)
is done to insure solid solder contact of rotor leads in the commutator. The rotor is placed in a fixture with the wires extending and is rotated at eight revolutions per minute forcing the wires between the counter-rotating brushes. The insulation is removed for a distance of approximately one inch, 1½ inches from the end. The rotor is then removed from the fixture and the wires are trimmed to length, within the cleaned area, and the leads are automatically soldered.

COST SAVING ITEM—234

Handling Equipment Lowers Costs



Fork lift truck moves a 2,500-lb. pallet load of canned fruit direct from warehouse into freight car. Use of mass handling equipment has resulted in a saving of 75% on this operation alone for the Filice & Perrelli Canning Company, Inc., Richmond, Calif.

COST SAVING ITEM—235

Special Resistance Welding Wheels Cut Production Cost

Excessive down time created a problem in production of Westinghouse power transformers before special resistance welding wheels were employed. Seam welding wheels reduced time required for "set-up" and for wheel dressing, thereby considerably reducing production cost. Welding wheels of a copper base alloy containing cadmium and zirconium were found to last longer. Transformer radiators now are turned out fast with consistently high quality welds, at much lower cost.

COST SAVING ITEM—236



All over your building,
fire sets its traps. In dip tanks,
transformer vaults, storage
spaces. In fact, wherever it can
stop your business in its tracks.

Make sure you don't fall victim.
Post a KIDDE Portable Extinguisher
next to every fire hazard.

Kidde

Walter Kidde & Company, Inc.,

547 Main Street, Belleville 9, N. J.

Walter Kidde & Company of Canada, Ltd., Montreal, P. Q.

You can't
buy a **better**
"soft" hammer
—anywhere!



There's plenty of power cushioned in the tough, resilient water buffalo faces that give delicate parts and fine finishes full protection. And faces are easily, quickly replaced. You have a comfortable, non-slip grip with the Safety-Flare handle. Work with the best "soft" hammer—make sure it's a C/R RAWHIDE Jaw-Head.



**NEW
FACES
IN SECONDS!**

Just loosen a nut and old faces are easily replaced. Tighten nut, and faces are in vise-like grip.

• Available from leading industrial suppliers. Also C/R Rawhide mallets and Rawhide mauls.

For further information write Dept. 22

CHICAGO Rawhide MFG. CO.
1301 Elston Ave., Chicago 22, Ill.
In Canada: Super Oil Seal Mfg. Co., Ltd.,
Hamilton, Ontario

New Bench-Type End-Finishing Machine Boosts Output 40%

In a large farm equipment plant, a wide range of steel rod pointing work is currently being handled 40% faster than by previous methods on a new bench-type end-finishing machine. On one job, direct labor costs per 100 pieces have been reduced from 51 cents to 23 cents. The machine is equipped with a foot-controlled air cylinder. The operator depresses an electrical foot control which starts an automatic clamp and feed cycle. The work is fed to rotating cutters which are held in the main spindle behind the chuck jaws. When the pointing operation is completed, the chuck automatically returns the workpiece and unclamps. The operator's hands are free at all times for faster stock handling.

COST SAVING ITEM—237

Mechanical Card File Saves Time Sorting Bidders' Inquiries

A new mechanical card file makes it possible for the Commonwealth of Kentucky to group qualified bidders for state jobs according to their equipment and other facilities. Under the former system there was no provision for limiting invitations to competent and otherwise qualified bidders, creating an additional amount of work in sorting through large numbers of inquiries. With the new system all records are kept in one place, and any one or group of records can be delivered in a matter of seconds at the touch of a button.

COST SAVING ITEM—238

Automatic Pump Controls Lubrication of 10 Machines

The use of one single fully automatic pump serving 10 of its Reiner Tricot machines every 45 minutes has given Fischer Mills, North Bergen, N. J., full control over lubrication from one central source. The company plans to extend the lubrication system to cover two additional machines in the near future. Prior to installing the new system, the company had to attend individual pumps on each machine, and it had no way of checking the quantity of lubricant applied to each bearing. With the new system, these disadvantages have been eliminated. The finger-tip adjustment on the new injectors gives perfect control over quantity of lubricant applied. Downtime for repairs has been cut 15% with a resulting increase in production rate.

COST SAVING ITEM—239

IT'S NONE OF *Your* BUSINESS!

but it's ours . . .

Why should YOU bother with work uniforms, shop towels—safety clothes? That's our business! The industrial launderer saves YOU money, energy and time through these services to industry:

UNIFORM RENTAL SERVICE

A whole wardrobe of work clothes is *YOURS* for the renting! They fit. They're safe!—no loose buttons, no dangerous tears—and they're scientifically cleaned and sterilized.

SAFETY CLOTHING

Do you need water, fire, static-PROOFED safety garments for your workers? Your industrial launderer rents safety clothing that's "custom-made for trouble!"

TOWEL SERVICE

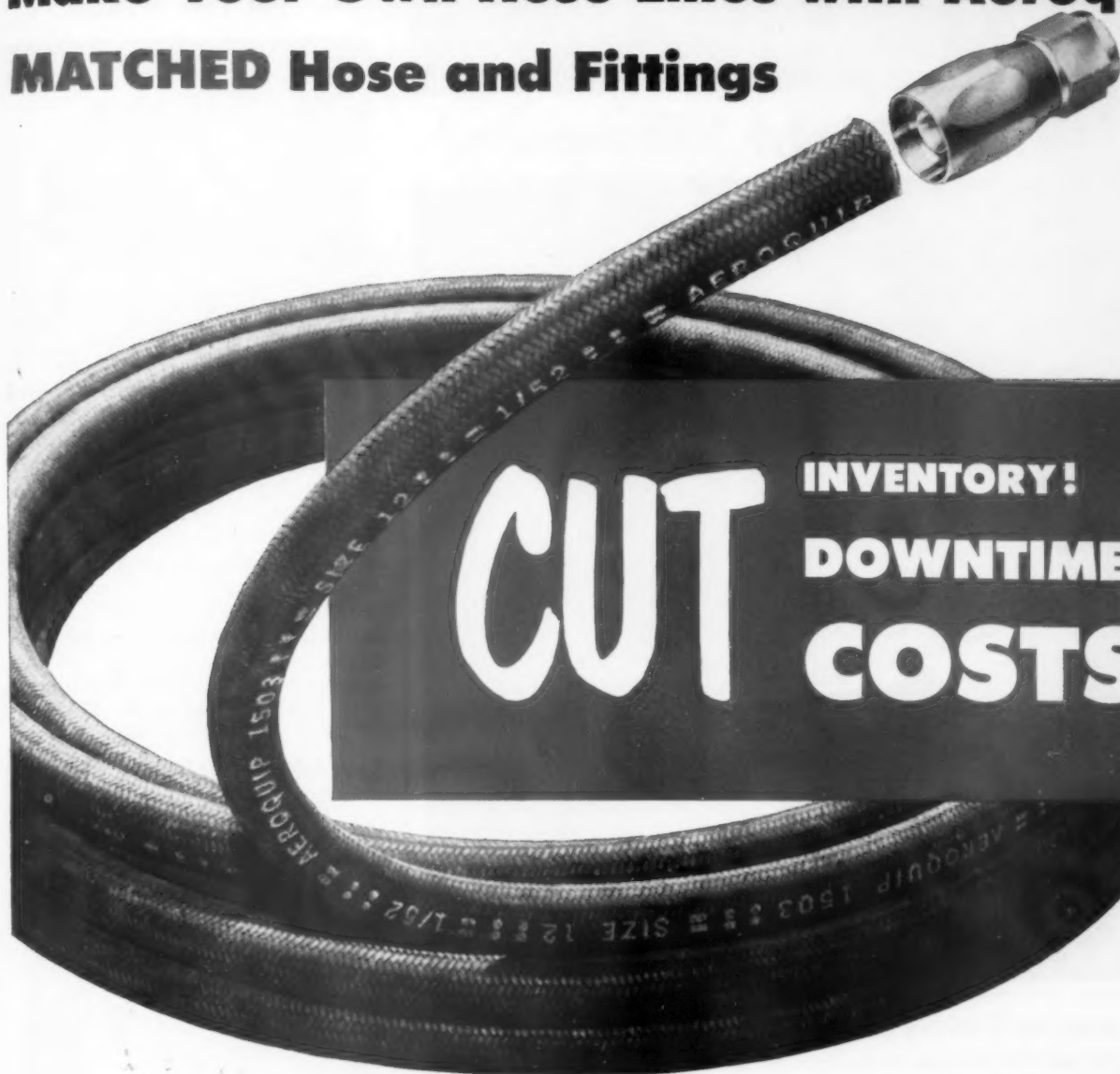
If you want sterilized shop towels of uniform size that combat occupational disease and shop accidents the Towel Rental Service is for you!



Write today for details of these and other rental services offered to industry by members of the:

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Make Your Own Hose Lines with Aeroquip MATCHED Hose and Fittings



Aeroquip Fittings are designed, developed, and produced to go with Aeroquip Hose. They form such a foolproof combination that Aeroquip guarantees performance. Thus, the hose lines made right in your own plant always measure up to Aeroquip's exacting standards of quality, the highest in the industry. A small supply of Aeroquip Bulk Hose and Fittings assures you of quick hose line replacements at all times . . . and Aeroquip Fittings are detachable and may be used again and again when making new hose assemblies.

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AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U.S.A. AND ABROAD

The Right Viewpoint



When you're thinking about aluminum or magnesium castings, you need the services of an organization with the right viewpoint.

We're referring, of course, to the right viewpoint toward the best possible use of these two light metals . . . ability to do the job; . . . service; . . . adequate facilities for production; . . . experience.

We here at Wellman like to think we have a combination of all these things . . . trained, interested personnel, three complete foundries and a modern pattern shop, almost a half century of experience in solving casting problems.

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- Well-Made wood and metal patterns

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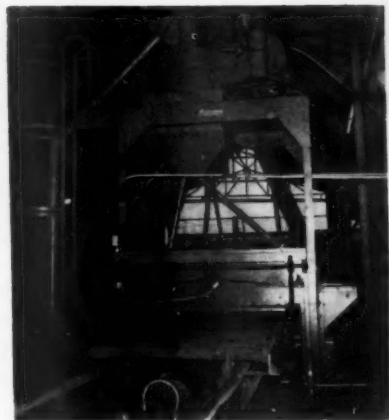
Airline Saves Two Hours on Gas Tank Welding



The San Francisco shops of United Airlines use an aluminum rod with exceptional metallurgical cleanliness, due to its being sized by extrusion, for welding. The rod is a standard alloy meeting Government specifications, suitable for all work where a 5% silicon aluminum should be used or any work requiring 43S, whether applied with torch or arc including sigma and airomatic processes. It saves as much as two hours on welding a DC-3 gas tank.

COST SAVING ITEM—240

Saves Over \$20,000 In Cleaning Soil Pipe and Fittings



The cost of cleaning soil pipe and soil pipe fittings at Herco Foundry, Inc., South Gate, California, dropped more than 50% since they started using two airless blast cleaning machines. These two units clean 42% more work each day than their previous cleaning method which involved five machines. Labor requirements dropped 20 man hours per day. Total savings per ton of metal amount to \$4.73, which means an annual saving of \$20,239.50. The appearance of the product has been vastly improved, and the new process is quiet and dust-free, in direct contrast with the noise and dirt previously experienced.

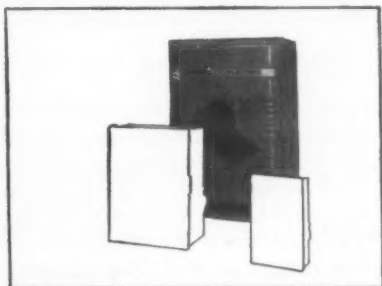
COST SAVING ITEM—241

3 Complete Lines

OF TRUMBULL SAFETY SWITCHES

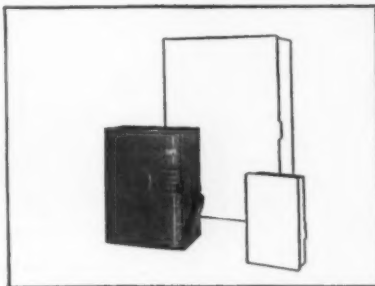
to fit practically any low voltage application with a new high in dollar value

When you select a switch from this complete and superior Trumbull line, you can be sure of getting the best possible device for a clearly defined type of service—and the best combination of favorable first cost and continuing economy of operation.



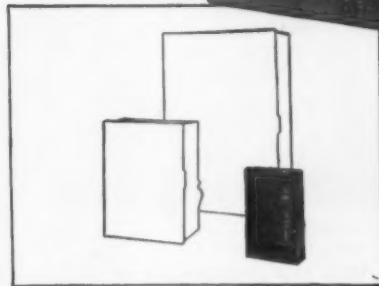
***HEAVY DUTY INDUSTRIAL**
Exceeds NEMA Type A Standards

The Trumbull Style HCI Front Operated Safety Switch is without any question the finest switch ever built by Trumbull, the Safety Switch leader. It has every installation convenience, every operating and maintenance advantage, and all the protection we know how to build into a switch. Its unique and thoroughly proved pole units introduce a basically superior switching principle. It is deliberately designed and built to exceed today's requirements and last as near to forever as a switch can.



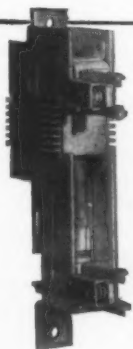
***STANDARD DUTY**
Meets NEMA Type A Standards

The Trumbull Style HCI Side Operated Safety Switch incorporates many advantages of the Trumbull front-operated style, particularly the same type of pole units. It will meet all but the most rugged demands with plenty to spare. While it meets NEMA Type "A" specifications it offers substantial cost savings. No Trumbull safety switch ever offered more for the money.



GENERAL USE
Meets NEMA Type D Standards

The Trumbull Style D Safety Switch is designed for many applications where service is not severe and continued overloads unlikely. This well-engineered and sturdily built switch does its job at real savings in first cost. It is suited for use in many distribution and branch circuits, for flood or sign lighting, motor disconnects, service entrances, heating and air conditioning equipment.



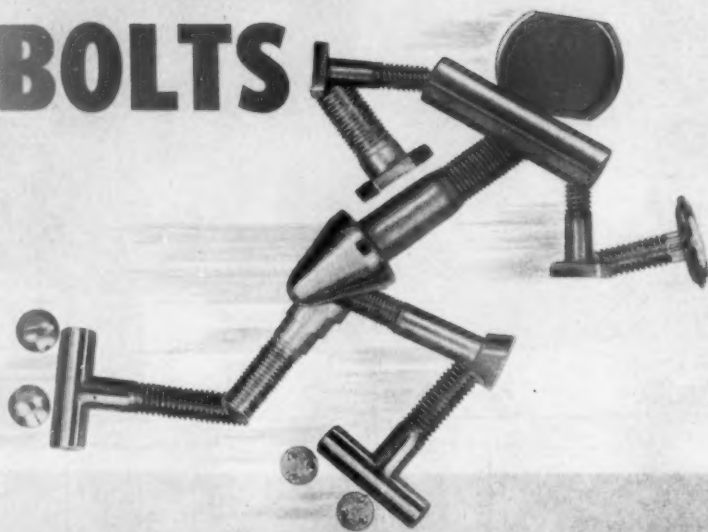
***The pole units of Style HCI switches** feature the magnetic-repulsion principle of arc-quenching, similar to that of a modern circuit breaker. Grid pins break up and quickly dissipate the arc. Double-break visible contacts are actuated by a heavy spring, with practically instantaneous make and break. These exclusive features result in high interrupting capacity and longer switch life.

There is a Trumbull safety switch to meet practically any application up to 1200 amperes, 600 volts AC or DC. For details see your Trumbull Distributor or write us direct about your requirements.

TRUMBULL T ELECTRIC

DEPARTMENT OF GENERAL ELECTRIC COMPANY
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We can be there in a hurry with **SPECIAL BOLTS**



We are equipped to design and manufacture special bolts to your individual requirements efficiently and quickly.

By using special Circle ® bolts, you can often simplify design . . . add extra holding strength . . . speed assembly . . . and lower unit costs.

In bringing all of your fastener problems to us . . . you receive the attention of specialists who can demonstrate the practical advantages of adopting special bolts . . . and who can *also* supply your requirements for standard fasteners.

It will cost you nothing to get the facts. Simply write us.



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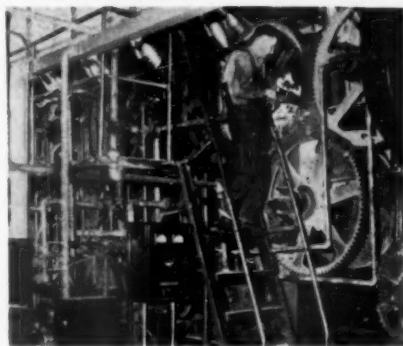
PRODUCERS OF CIRCLE® PRODUCTS — BOLTS • NUTS • RIVETS AND SPECIAL FASTENERS

Savings From Oil-Feed Reamers

Reamed finishes which were never considered possible are now obtained on production jobs with new oil-feed reamers. As an example, 1,000 pieces were reamed to a surface finish of 20-25 micro-inches before it was necessary to sharpen the reamer. The feed is 1.75" per minute at 280 RPM, requiring 30 seconds to ream the 7/8" length of cut.

COST SAVING ITEM—242

50% Less Lubricant Required



A paper mill which had been using regular lubricants on the spur gear train of the pulp drier experienced extreme difficulty due to grease being thrown off operating machinery onto ladders and decking. Not only did this create dangerous areas in which to work, but it created a bad fire hazard as well. The master mechanic reports that by switching to a specialized lubricant they eliminated "throw-off" entirely. He also reports that the new lubricant can be applied safely while machinery is running, and that the gears require 50% less grease to maintain the same coating.

COST SAVING ITEM—243

Accounting Machines Speed All Bookkeeping Work

The Bennington Brush Company is now doing all its accounting on a new machine, including accounts receivable, accounts payable, disbursements and payroll. Formerly, all bookkeeping operations were done by manual methods, using looseleaf forms for ledgers and journals. Postings are now up-to-date, statements are in the mail the second day of every month, whereas they previously were never mailed until the 10th or later. A good machine operator can accomplish more work with greater accuracy than in the past.

COST SAVING ITEM—244



Westinghouse

saves in excess of
\$57,000 per year
 by **FORK TRUCK HANDLING**

● A fleet of fork trucks including Bakers, coupled with intelligent planning and material handling engineering, enables Westinghouse Electric Corporation to cut handling costs more than \$57,000.00 per year at its huge East Pittsburgh works. Savings in which the Baker Trucks participate, include:

- \$12,000.00 warehousing raw materials in the molded materials section
- Another \$12,000.00 handling finished molded products
- \$9,000.00 on one scrap handling operation
- \$7,500 by handling castings on pallets in yard storage
- 100% added storage capacity in molded materials warehouse
- Doubling capacity of drum storage space in yard

These savings were made possible by replacing manual handling and other slow methods with efficient fork-truck unit-load handling. In some instances Westinghouse devised special pallets and containers to achieve greatest speed and efficiency from their versatile Fork Trucks.

The Complete Story is documented in Baker Case Study Report No. 272. Use this coupon to get your free copy.



Illustrated above is a special stringer pallet which enables Baker Fork Trucks to tier and transport drums four at a time, doubling storage capacity and speeding these operations substantially by eliminating manual methods.

◀ This method of handling scrap saved \$9,000.00 in one year. Driver merely operates controls—the truck does the work.



◀ Handling castings in yard storage on pallets with Fork Trucks saves \$7500.00 per year over former methods—and multiplies storage capacity by tiering.



◀ By palletizing bagged materials for fork truck handling, tiering to warehouse ceiling more than doubles storage capacity. This method cuts handling costs \$12,000.00 per year.

Baker

INDUSTRIAL TRUCKS

THE BAKER-RAULANG COMPANY
 1253 West 80th Street, Cleveland 2, Ohio

- ☐ Please send Westinghouse Case Study Report No. 272.
☐ I am also interested in pound capacity trucks.

Name Title

Company

Address

City State

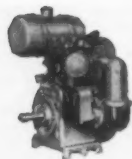
**Most Specified . . .
Most Used . . .
Most H.P. Hours . . .
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Air-Cooled
ENGINES**

Specified as integral power units by more than 500 original equipment manufacturers . . .

Delivering dependable, efficient power on a greater variety of service applications than all other makes of engines combined, in a 3 to 36 hp. range . . .

Supplying Most H.P. Hours of heavy-duty on-the-job power in all weather, all climates . . .

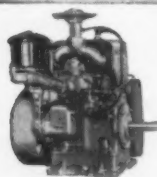
Constantly demonstrating the outstanding



3 to 6 hp.



6 to 9 hp.



7 to 14 1/2 hp.



15 to 36 hp.

Power
to Fit the
Machine

Power
to Fit the
Job

efficiency and trouble-free dependability of AIR-COOLING . . .

These are some of the factors worth considering in the selection of engine power for YOUR equipment. Detailed engineering data and descriptive literature on request.



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World's Largest Builders of Heavy-Duty Air-Cooled Engines

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**STEEL WASHERS
for ALL REQUIREMENTS**

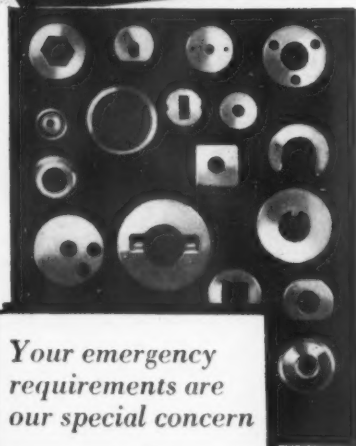
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Fit yourself for a halo and keep production rolling when you go to dependable Joliet for standard and special washers. Thousands of special dies in many shapes and forms, 9/32" to 8" O.D., gauges No. 28 to 3/8". A variety of finishes available to meet your special needs, including: Electro-plating, Galvanizing, Parkerizing and Cyanide hardening.

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FOR QUALITY AND SERVICE**

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Order Handling Simplified

Order handling for the Midland Cooperative Wholesale Company, Minneapolis, Minn., is greatly simplified by the use of a modern desk top whiteprint reproduction machine and a new approach to paperwork simplification. Dealers are furnished order books containing a translucent form which is forwarded to Midland. From it the floor tickets, warehouse, packing, shipping and back-order copies are quickly and economically reproduced by the desk top whiteprint machine. The system saves Midland many clerical hours formerly spent in rewriting. In addition, the new system completely eliminates transcription errors and provides all the order copies needed immediately.

COST SAVING ITEM—245

**Fastener Saves One-Third
Of Hose Clamp Assembly Costs**

George K. Garrett Company, Philadelphia, Pa., saves more than one-third of its previous cost in assembling a special hose clamp through the use of a specially-designed fastener. Formerly, a worm-gear screw with a slotted head was used to secure a precision clamp. A brass collar was then made to fit around the screw head and prevent a screw driver from slipping out during application or adjustment of the clamp. To reduce costs, the whole unit is now cold-formed, including the screw, slot and collar, in a single piece, entirely eliminating fabrication and assembly of the brass collar.

COST SAVING ITEM—246

**Metallizing Salvage Saves
Axles Worth Up To \$130**

A large manufacturer of heavy road building equipment uses metallizing for the salvage of parts accidentally mismachined in its production shop. Most of this work is done on the bearing and seal-fit portions of front-stub axles used on earth moving equipment. These axles varying in size and shape are valued, after manufacture, at between \$75 and \$130. Typical application is the salvage of stub axles, of 5" bar stock, 30" long, accidentally machined undersize at one of the bearing fits. The part is set up in a lathe, cleaned with emery cloth and then sprayed for about 10 minutes to bring the undersized area to the required dimension, with allowance for finishing.

COST SAVING ITEM—247

Udylite



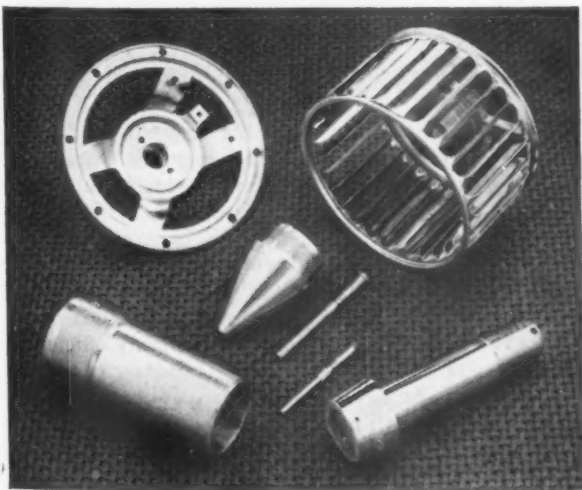
LABORATORY CONTROL MAKES THE DIFFERENCE!

In *cadmium plating*, good results, time after time, are due to tested supplies and ingredients. Quality must never vary. That's where Udylite thoroughness pays off! "Uniformity through laboratory control" is the keynote of all Udylite supplies. For example, check these materials used with new Udylite BRY-CAD:

- The unvarying purity of Cadmium Ball Anodes—which Udylite originated—is an example of Udylite uniform quality. All anodes are spot-checked to maintain uniformity of size, content and weight.
- Udylite Ball Anode containers are designed to use anodes to the last ounce—as well as maintain maximum anode area.
- Udylite Cadmium Salt #153 contains all basic components of the cadmium bath. You can be sure that the chemicals used are finest quality . . . and mixed in EXACT proportions for best results.
- Udylite Brightener #53 used in the BRY-CAD Process results from years of laboratory research.

So . . . for best results . . . for uniformity in plating on YOUR jobs . . . choose Udylite anodes, containers, materials. Call your Udylite technical man or write direct for complete lists of supplies. THE UDYLITE CORPORATION—DETROIT 11, MICHIGAN. West of Rockies, L. H. Butcher Co., Los Angeles 23, California.

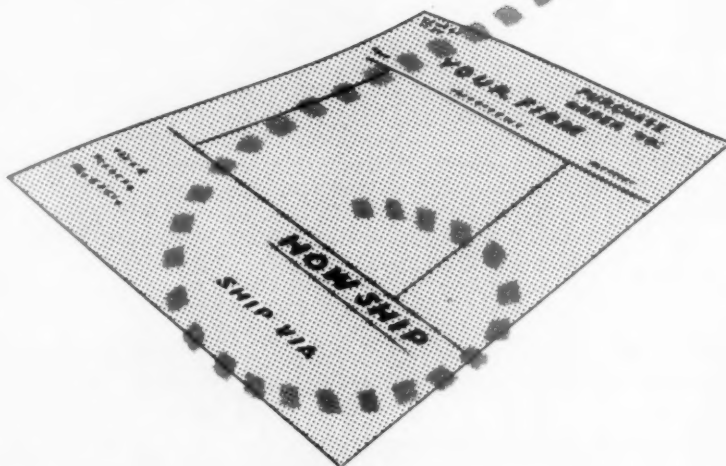
Note various items of intricate shape plated with the new Udylite BRY-CAD.



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THE
Udylite
CORPORATION
DETROIT 11, MICHIGAN

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this important part
of your purchase order?



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Serving 30,000 communities through more than 150 stations in the U. S. and agents in principal foreign countries.

Flashlight Saves Company \$2.00 Per Employee



The maintenance department of a telephone company using 50,000 flashlights annually reports a \$2.00 saving per employee through the use of a plastic right angle flashlight that stores an extra bulb in its bottom cap. This eliminates the need for employees to take the time to go to a stock room for a replacement bulb and assures him of having the right bulb for his flashlight.

COST SAVING ITEM—248

Motorized Sweeper Cuts Cleaning Time Up to 80%



A new, improved motorized industrial plant sweeper has been designed to do the heaviest industrial sweeping jobs 80% faster than the old-fashioned push broom method. A powerful rotary brush sweeper and heavy-duty vacuum cleaner combined into an integral unit, the machine is said to be highly efficient on dust, dirt, steel shavings, scrap paper and cardboard, grass, leaves, small metal parts and milling debris. One instance is cited where one man and a sweeper in a large paper products firm sweep 12 miles of eight-foot warehouse aisles in six hours. The job formerly required three men with push brooms working eight hours.

COST SAVING ITEM—249

THEY COME IN ALL SIZES FROM FLYWEIGHTS TO HEAVYWEIGHTS



Need something small in drop forgings? Or do your present needs call for a forging that runs to weight—say a couple of hundred pounds or more?

Either way, Bethlehem is well able to handle your design—in any size that falls between these two extremes. Through the years we've made millions of closed-die forgings for the oil, mining, aviation, automotive, electrical, and other types of industries . . . and we're still going full blast, turning out a wide range of sizes and types for both old and new customers.

Keep our name handy, won't you? Think Bethlehem and call Bethlehem for a good job of forging—a job planned right, done right.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM FACILITIES FOR CLOSED-DIE FORGINGS INCLUDE:

- Full die-sinking equipment
- Steam and board drop hammers
1500 to 8000 lb
- Mechanical presses to 3000 tons
- Upsetters to 9 in.
- Heat-treating equipment
- Cleaning and inspection service



BETHLEHEM DROP FORGINGS



here's why **COO** "MISSING LINKS" REPAIR CHAINS BETTER

"MISSING LINKS"

MATCHED

Made with special dies so that each half is pressure fitted. This eliminates play between the forgings, insures perfect fit when riveted into chain. There is no strain on the rivets.

INTERLOCKING LUGS

More costly to put in the dies, but they grip firmer and really do the work of taking the load.

ORDINARY LINKS

UNMATCHED

When loose fitting links are put into a chain and the load is applied, the rivets take most of the strain and tend to shear until the links set. This may later cause the link to open up under heavy load.

ROUND LUGS

Ordinary round lugs fitting into round holes don't have the holding power, tend to shear or force out under strain.

Laughlin "Missing Links" are made of carefully heat treated, high grade steel. They have features found in no other repair links, and are also supplied in an exclusive pear shaped design in sizes for $\frac{3}{8}$ " to $1\frac{1}{8}$ " chain.

Buy From Your Local Distributor

He is in business to give you prompt, courteous service and to save you money, time and trouble. He's your one best source for industrial supplies.

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THE THOMAS
LAUGHLIN CO.

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LAUGHLIN



* T. M. Reg.

Please mention **PURCHASING** Magazine when writing to advertisers.

Silicone Insulation Increases Motor Life Over 20 Times

Use of a new silicone insulation has increased the life of machine tool motors from about eight days to a minimum of six months, saving over \$8,000 a year in rewind costs plus 400 manhours of down-time. The motors, rated at 5 hp, 3600 rpm, were stopped short every 30 seconds or 105 times an hour by applying direct current to the stator. In such service, the Class A motors had about 32 failures per year. With four machines in service, rewinding with Class A materials at \$80 per failure, cost \$10,000 per year.

COST SAVING ITEM—250

Grinding Wheel Saves 38% on Carbide Blade Grinding



Savings of 38% on carbide blade grinding through the use of a new grinding wheel have been achieved by a major automotive plant in up-state New York. The resin-bonded silicon carbide wheel can be used to grind both shank steel and carbide with a greater depth of cut. In some cases it has replaced the diamond wheel entirely in grinding shank steel.

COST SAVING ITEM—251

Toggle Clamps Boost Air-Duct Production 50%

United Stove Company, Ypsilanti, Mich., subsidiary of Gar Wood Industries, has increased production of air-ducts for automatic washer-driers over 50% by redesigning the fixtures with new type toggle clamps. The original fixture frame weighed 65 pounds and two men handled the unit while the air-duct assembly was being spot welded. The present fixture weighs only 22 lbs. and requires only one man for the spot welding operation. Production has risen from 39 pieces per hour to 67 pieces per hour by replacing the plier type clamps originally used with the new toggle clamps and redesigning the frame member of the fixture.

COST SAVING ITEM—252



HOW FAR ARE YOU... FROM AN AIRCO OXYGEN PLANT?

Look at the map. Every pin locates an Airco plant producing high-purity oxygen for your use. These 71 plants, plus their storage facilities and their fleet of delivery trucks, provide a dependable and flexible supply for your peak and emergency oxygen needs.

Your everyday needs, of course, would be supplied from the plant nearest you. Can you find it on the map? This convenient location means fast delivery, minimum scheduling and minimum transportation.

Call or write your nearest Airco office for help in planning the most economical oxygen supply for your needs. Airco specialists can help you use oxygen most efficiently, too.

**Rely on Airco for high-purity oxygen—
when and where you need it.**



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AND OFFICES IN
MOST PRINCIPAL CITIES

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Air Reduction Sales Co. • Air Reduction Magnolia Co. • Air Reduction Pacific Co.
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at the frontiers of progress you'll find





CLEVELAND *Top Quality* High Carbon Heat Treated Cap Screws

It's easy to select hex head cap screws when you know that *one type*, which costs very little more than the general run, has all the desirable qualities recommended by metallurgists and engineers. Cleveland High Carbon Heat Treated Cap Screws made by the Kaufman Process—the *Double Extrusion* method—"come through" with all the important points experts look for in correctly made fasteners.

Cleveland specializes in Cap Screws (all standard heads), Set Screws and Milled Studs, in unusually wide size ranges.

CLEVELAND *Top Quality* FASTENERS

THE CLEVELAND CAP SCREW COMPANY
2722 East 7th Street, Cleveland 4, Ohio

Warehouses: Chicago • Philadelphia • New York • Providence

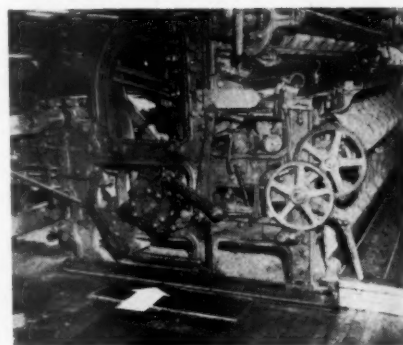
originators of the Kaufman *DOUBLE EXTRUSION* Process
Ask your jobber for Cleveland Fasteners

Specially-Designed Welding Electrode Saves \$2.10 Per Unit

An Ohio firm making wide use of resistance welding materials in its manufacturing process switched from one type of welding electrode to a special mashed and bent tip designed for them. The saving in unit price was \$2.10. In addition, the new electrode provided service life of more than six weeks of two eight-hour shifts daily. The tip formerly used had been good for just two eight-hour shifts, and had required expensive machining operations to be placed in service.

COST SAVING ITEM—253

Looms Mounted on Felt Pads Reduce Plant Noise Problem



Roxbury Carpet Company, Saxonville, Mass. mounts looms and other textile machines on felt pads like those shown in this photo. Prior to installation of machines on the pads, noise from the plant could be heard across the street. Since use of the pads started, the noise factor has been reduced considerably, resulting in greatly improved working conditions in the mill. Added advantage in mounting smaller looms in this manner is the fact that relocation is simplified. Looms can be quickly moved from one part of the plant to another, without drilling of floors as no bolts or lag screws are used with this mounting method.

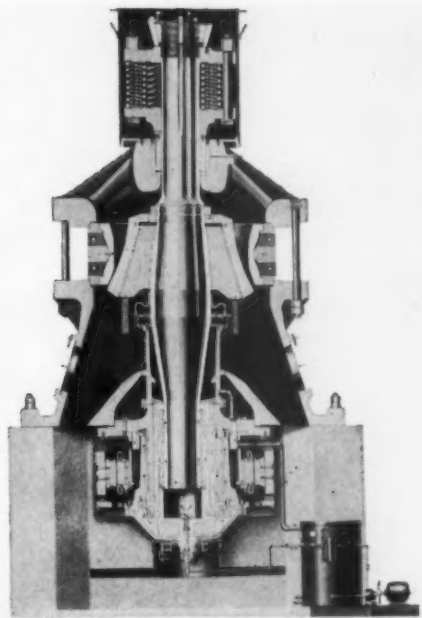
COST SAVING ITEM—254

Primer Cuts Spray Booth Handling Time In Half

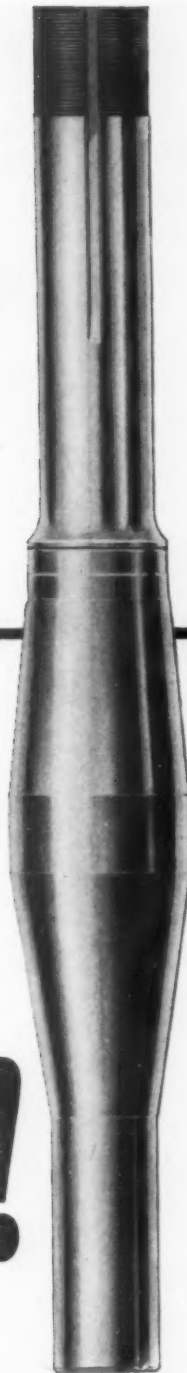
A midwestern truck body manufacturer cut spray booth handling time in half through the use of a primer that contains two of the best corrosion resisting pigments known to the paint industry. The manufacturer reports that the primer flowed out smoothly, leaving no overspray, even where it was necessary to double back on corners. It dried in minutes, required no sanding and was ready for finish coat immediately with a smooth gloss.

COST SAVING ITEM—255

This Kennedy-VanSaun
CRUSHER SHAFT
went to work on time



thanks to
Standard Steel's
**fast
service!**



To keep production moving without delays so that finished equipment may be shipped on schedule, Kennedy-Van Saun Manufacturing & Engineering Corporation realizes the importance of Standard Steel's ability to supply necessary materials on time. Vice President F. O. Reedy writes:

"A matter of great importance when contracting for the purchase of forgings is the problem of getting deliveries. We have found when Standard Steel Works, as contractors, make a promise of delivery, it is very dependable, and this is extremely important to us."

In addition they have found the analysis and quality of the steels used in Standard Steel forgings and castings contribute to most dependable performance records.

Thus another reason why you should standardize on Standard Steel forgings and castings to protect your reputation and the quality of your products is the fact that you can be certain of Standard's *fast service* without sacrifice of quality.

ONE OF SIX REASONS why you should always call Standard Steel for forgings and castings.

1 Quality Steel—through production of own steel by acid process.

2 Uniformity—assured by precise control of forging and rolling operations.

3 Fast Service—a vital factor in the continuing growth of Standard Steel for over 150 years.

4 Testing—radiographic tests, tensile tests, hardness tests, ultrasonic probing of internal structure, etc.

5 Capacity—unsurpassed ability to produce forgings and castings of unusual sizes and shapes, such as weldless rings all the way up to 144" O.D.

6 Experience—produced by skilled workmen with 20 to 40 years experience.

For more information write Dept. 8736

STANDARD STEEL WORKS DIVISION
Burnham, Pennsylvania



BALDWIN - LIMA - HAMILTON

General Offices: Philadelphia 42, Pa. • Offices in Principal Cities



CAMPBELL CHAIN

Wherever you need chain,
in any size or grade, to
any desired specification.

CAMPBELL CHAIN *Company*

Main Office: York, Pa.

West Burlington, Iowa • Portland, Oregon

Sacramento, California

Brushes Speed Replacement Time In Cotton Mills

To retuft the brushes used on cotton carding machines it was formerly necessary to send the worn brushes to a brush manufacturer. This frequently involved from one to 10 days' delay before the brushes were returned. Pre-spiralled, steel back brush strips now available may be installed by the mill's own mechanics in from 45 to 60 minutes per brush for the initial installation. Subsequent replacements may be made in 15 minutes. Mills report that this denser brush cleans more efficiently and outwears other types by several years.

COST SAVING ITEM—256

Fork Truck Cuts Costs 91%



Old methods of moving cans of fruit from warehouse to labeling machines required 11 manhours to move the same amount a fork lift truck moves in one hour. Here fork truck sets down pallet load of 1,584 cans at labeling machine, reducing handling costs in this operation 91% for the Filice & Perrelli Canning Company, Inc., Richmond, Calif.

COST SAVING ITEM—257

Electric Lift Truck Proves Labor Saving Value

A phenolic resin manufacturer recently had a perfect opportunity to evaluate the specific dollar and cents service rendered by its electric materials handling equipment. An operator neglected to charge the battery of his electrically-operated lift truck, which normally is used to transport lead molds weighing 6,000 lbs. from area to area as production requires. While the battery was being charged, the combined efforts of three men and an ordinary hand lift truck were required to do what one man normally does with the electric lift truck.

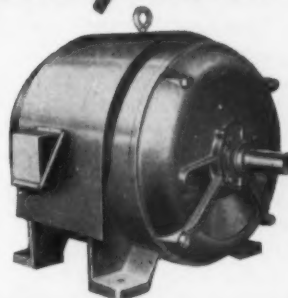
COST SAVING ITEM—258

Wagner
ELECTRIC MOTORS
... the choice of leaders
in industry

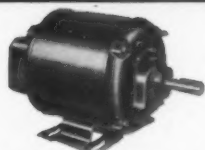
Wagner Quality Motors for your product or your plant

Whatever your motor requirements may be—single-phase or polyphase, 1/125 hp or 400 hp—Wagner can offer a standard motor that is entirely dependable in its specific application. The wide variety of motors shown here is typical of the many motors and motor modifications in the complete Wagner line.

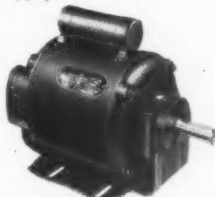
At right is TYPE RP—open type polyphase squirrel-cage motor. It is drip-proof and suitable for all general purpose applications. 1/6 to 400 hp.



SINGLE-PHASE



TYPE RB—Split-phase Induction. For easy starting applications with high starting current. 1/20 to 1/2 hp.



TYPE RK—Capacitor-Start Induction. For general purpose applications requiring high starting torque—normal starting current. 1/6 to 5 hp.

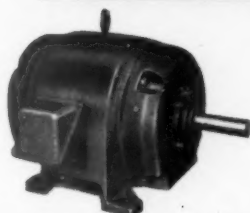


TYPE RG—Repulsion-Induction. For high starting torque applications involving a very long starting period. 1 to 5 hp.



TYPE RA—Repulsion-Start Induction. For general purpose applications with high starting torque—low starting current. 1/2 to 15 hp.

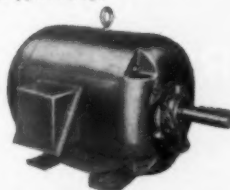
POLYPHASE MOTORS



TYPE XP—Splashproof. Protected against splashing or dripping liquids. 1/4 to 200 hp.



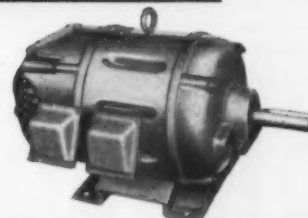
TYPE TP—Totally-enclosed, non-ventilated. Fully protected. 1/4 to 15 hp.



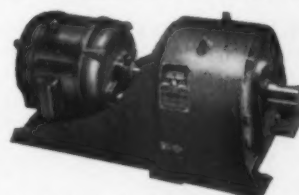
TYPE CP—Totally-Enclosed Fan-Cooled. Protected against dirt, chips, abrasives or fumes. Steel frame. 1 to 250 hp. Also in explosion proof type HP.



TYPE EP—Corrosion-resistant Totally-Enclosed Fan-Cooled. Cast iron frame. 2 to 250 hp. Also available in explosion proof type JP.



TYPE RS-1—Wound Rotor. Constant or adjustable varying speed. 1 to 250 hp. TYPE RS-2 for intermittent service. 2 to 200 hp.



GEAR MOTORS—Single-phase or Polyphase. Open or enclosed types. 1/20 to 50 hp.

* * *

In addition to a complete line of motors, Wagner also furnishes Increment Type Motor and Starter Combinations, Jet Pump Motors and a complete line of Transformers: Dry-type, Distribution and Power. Wagner engineers welcome an opportunity to serve you. Consult the nearest of our 32 Branch offices, or write direct.

Wagner
Electric Corporation
EST. 1891

WAGNER ELECTRIC CORPORATION
6360 Plymouth Ave., St. Louis 14, Mo., U.S.A.

ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES
AUTOMOTIVE BRAKE SYSTEMS — AIR AND HYDRAULIC

BRANCHES IN 32 PRINCIPAL CITIES

MORE FLEXIBILITY IN YOUR SHOP

Harden, heat treat, temper and anneal with one furnace . . . the Johnson No. 706.

Another in the Johnson line of dependable gas equipment has won its place in both large and small shops and plants. Operators like its easy adaptability. Six Johnson Direct Jet Bunsen Burners with individual shut off valves and pilot lights provide steady, easily controlled heat from 300 to 1850° F. Semi-muffled type with burners operating below Carbofrax hearth. Firebox: 7"x 13"x 16½". Also available bench style. Write for complete and factual information.

A smaller version of this highly flexible furnace is the No. 654. Four burners deliver 300 to 1800° F. Firebox: 5" x 7¾" x 13½". Available as pedestal or bench style.

JOHNSON GAS APPLIANCE CO.

603 E Avenue, N. W., • Cedar Rapids, Iowa

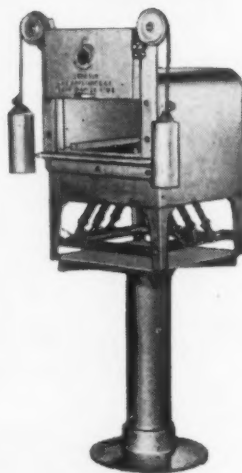
Johnson No. 706 Pedestal Style \$278.00

Bench Style \$250.00

Johnson No. 654 Pedestal Style \$150.00

Bench Style \$124.00

F.O.B. Factory



**Model No.
706**

JOHNSON

INDUSTRIAL GAS EQUIPMENT

Furnaces • Burners • Torches • Valves • Mixers • Blowers



AMERICAN Tubular and Split RIVETS

In all metals, all styles,
for all industrial applications.

Write for price list.

AMERICAN RIVET COMPANY
849 N. Kedzie Ave., Chicago 51, Ill.

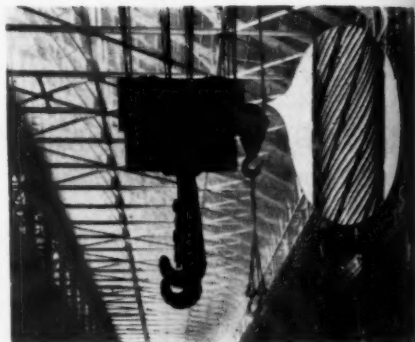
BUY AMERICAN...Tubular and Split Rivets...

Free-Machining, Lead-Bearing Steel Bars Boost Output 49%

A caster manufacturer achieved 49% more production and 60% greater machining speeds by replacing its steel with free-machining, lead-bearing steel bars. Surface and spindle speeds rose and overall costs were substantially reduced.

COST SAVING ITEM—259

Flattened Strand Wire Rope Gives 100-200% More Service



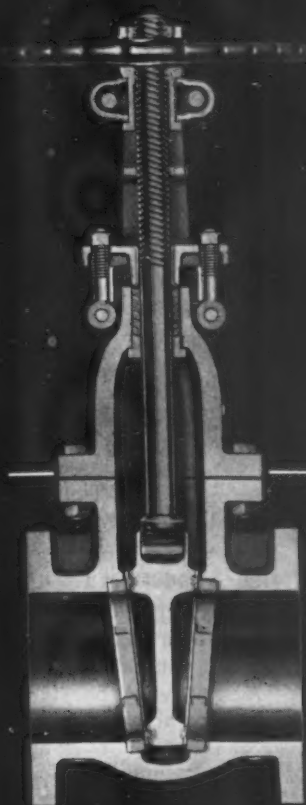
Flattened strand wire rope outlasts round strand rope as much as 100% to 200% on such applications as hot ladle cranes, skip hoists, dredge ropes and others. Flattened strand wire rope differs from round strand in that the strands have a flat outer shape, which permits four wires to contact sheave or drum grooves, substantially reducing abrasive wear. It prolongs its own life and the life of equipment, because the outside surface of flattened strand is relatively smooth, preventing corrugation and wear on sheave grooves.

COST SAVING ITEM—260

New Conveyor System Cuts Receiving, Shipping Time

G. L. Kimmerle and Brothers, Inc., Newark, N. J., cut receiving time approximately 40% and shipping time 50% through the use of belt and gravity conveyor system. Heavy lifting and carrying in and out of basement of heavy cases of paint products have been eliminated and service to dealers is improved because shipments can be made at any time rather than when extra help is available. Backroom congestion and clutter is eliminated with all goods received and shipped directly from the basement. Truck drivers like the new handling method and give better service since they no longer have to lift and carry heavy cartons.

COST SAVING ITEM—261



W

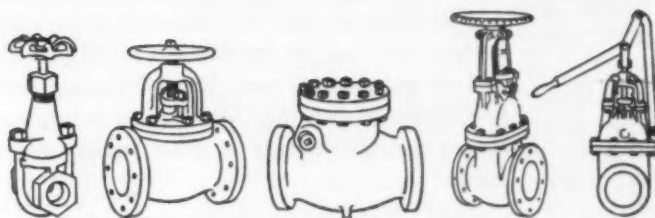
IRON

COMPLETE LINES OF IRON VALVES AND PIPE FITTINGS are manufactured by Walworth in a variety of types, pressure ratings, sizes, and patterns for general industrial use.

Walworth also manufactures complete lines of valves (including Lubricated Plug Valves), and pipe fittings made of steel, bronze, and special alloys.

These valves and pipe fittings, plus Walworth-made pipe wrenches total approximately 50,000 items and are sold through distributors in principal centers throughout the world.

Walworth engineers will be glad to help you with your problems. For further information call your local distributor, nearest Walworth sales office, or write to Walworth Company, General Offices, 60 East 42nd Street, New York 17, New York.



Iron valves in gate, globe, angle, check, and lubricated plug types are manufactured by Walworth. Illustrated is a sectional view of a Walworth No. 726F Standard Iron Body, Bronze Mounted, Wedge Gate Valve with flanged ends. This line of valves is available in sizes 2 to 30 inches. Similar valves of All-Iron type are also available.

WALWORTH

Manufacturers since 1842

valves . . . pipe fittings . . . pipe wrenches

60 East 42nd Street, New York 17, N. Y.

DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD



HOBBS

EST. 1882

TANGLE-PROOF LOCK WASHERS

You can *depend* on Hobbs spring lock washers to meet all job requirements and government specifications. High in quality—low in cost, these fasteners are available in high carbon steel, stainless steels, silicon and phosphor bronze, and all types of platings. Their "tangle-proof" construction speeds production. Warehouses throughout the U. S. assure prompt delivery of your regular and emergency needs.

HOBBS MANUFACTURING CO., Fastener Division
10 Salisbury St., Worcester 5, Mass.

HOBBS HOBLOK & LOXIT Cotter Pins



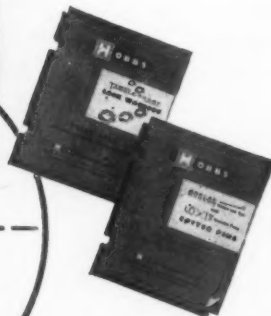
HOBLOK (Hammer-Lock Type)

cotter pins lock securely when head is hit with hammer. No bending of prongs required. Saves time and reduces costs!



LOXIT (Extended-Prong)

cotter pins meet all government specifications. Both types of Hobbs cotter pins are available in steel, brass, stainless steel, and monel.



Write for Hobbs lock washer and cotter pin price lists today!

\$100 to \$225 Saved in Tagging Engines During Disassembly

Various installations of a new positive identification control system for tagging parts and properties has resulted in substantial savings in time, labor and dollars for many military installations. During disassembly of engines, tagging with new metal plates saved an average of from \$100 to \$225 per engine tagged. Both metal tag finish and fluid are weatherproof, non-corrosive and withstand most chemical cleaning and plating solutions. The fluid will not rub off or wash off the plate, yet it can be erased with a pencil eraser.

COST SAVING ITEM—262

Controlled-Atmosphere Furnace Results In Higher Production

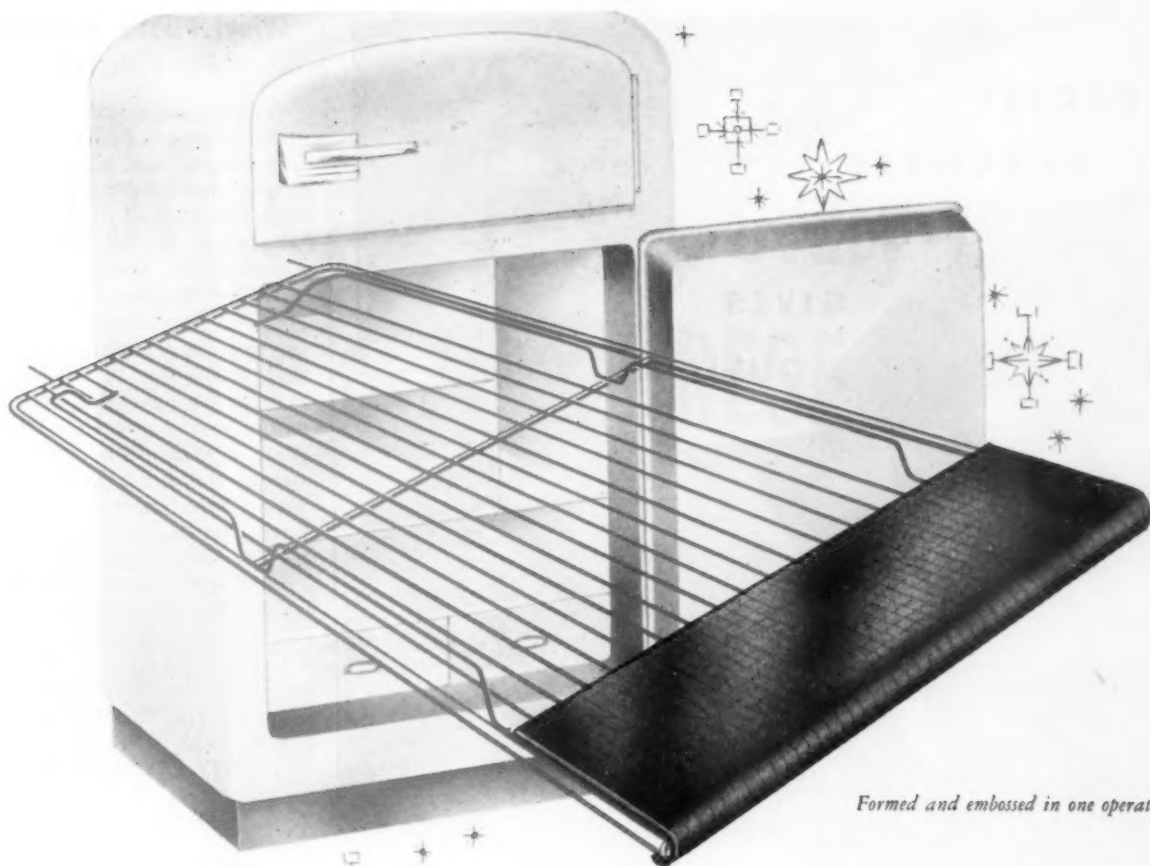
Installation of a controlled-atmosphere furnace, heated by 24 special heating elements, has boosted production to 160 commercial refrigeration receiver tanks per hour at Tube Manifold Corporation, Buffalo, N. Y. Each tank contains a total of 13 copper brazed joints. Economic advantage lies in uninterrupted furnace operation due to ease of replacement of the elements without furnace shut-down. Saving feature over fuel-fired furnaces is attributed to elimination of rejects in obtaining chemically-clean tank interior surfaces. The ability of the heating elements to easily maintain the required 2100 deg. F. temperature, with an appreciable margin of safety, and to function unaffected in the atmosphere employed, insures long life at high output rate.

COST SAVING ITEM—263

Airless Blast Machine Saves Total of \$1491 Each Month

A 63 cubic foot airless blast machine, capable of holding more than three tons of castings at a single time, has slashed cleaning costs at West Michigan Steel Foundry Company, Muskegon, Mich. Cleaning three and one-half tons of castings in 10 minutes, it has reduced manpower requirements 60% and effected a direct cost savings of \$1491 each month in the handling of pieces weighing from 1/4 lb. to 2800 lbs. As compared to the former method, 9,340 man hours and \$17,898 are saved annually, since it takes only 19 man hours daily to operate this machine as compared to 50 man hours required for the cleaning method formerly used. Cleaning costs per ton were reduced from \$3.56 to \$2.11.

COST SAVING ITEM—264



Formed and embossed in one operation

HOW READY-TO-USE PREFABRICATED ROLLED SECTIONS

Reduce Costs

If you use tubes, tees, angles, channels, mouldings, zee or special shapes in your product, we can do the entire job for you in one fast operation on our exclusive roll forming machines. Continuous rolling, as we do it, saves man-hours, eliminates extra handling and improves uniformity and accuracy for you. This is particularly true where notching and punching can be combined with the rolling operation. These complex shapes, accurately cut to your length, are available up to .125

thickness. We roll form steel, aluminum, copper, brass, or zinc (according to your specifications).

The modern, functional and decorative refrigerator part shown above is only one of many sections Roll Formed Products Company makes for large and small companies.

If your position is to increase production, reduce costs, or to get a tough job done, send your blueprint or sketch for prompt quotation.

ROLL FORMED PRODUCTS

COMPANY

MAIN OFFICE AND PLANT

3763 OAKWOOD AVENUE

YOUNGSTOWN, OHIO

**PROFIT
PURCHASE
FINALLY
GIVES
OUT!!**



**Quick replacement paves
way for NEW RECORDS with
REPUBLIC CONVEYOR BELTING**



for Profit-making Performance Every Time buy **REPUBLIC RUBBER PRODUCTS**

The real keys to Profit Purchasing are performance and service. International Mineral & Chemical Company proved this on a tough job moving debris and wet rock tailings up a 15° incline at their Peace Valley Mine in Florida.

Although the load contains oily chemical materials which spell death for ordinary conveyor belts, there's been no trouble since Republic's Oil-Resistant Excelco Belts and Republic's local Distributor went to work. Here's the record:

Five years, non-stop performance, more than 10 million long tons of material moved before replacement was recommended for the first belt! At that time, Republic's local Distributor was on hand to see that the switch was made smoothly and economically. Republic's Distributor will also be on the job when the second, younger belt needs replacement. Republic is always ready with the right product for your job and the kind of servicing policy that builds long-lasting and profitable relationships between you and the specialist in Industrial Rubber Products.



Your local Republic Distributor can help you plan, select, apply and maintain any product of Industrial Rubber. If his name is not listed in the yellow section of your telephone directory, it will pay you to write us now for his name and address.



REPUBLIC RUBBER DIVISION

LEE RUBBER & TIRE CORPORATION, YOUNGSTOWN 1, OHIO

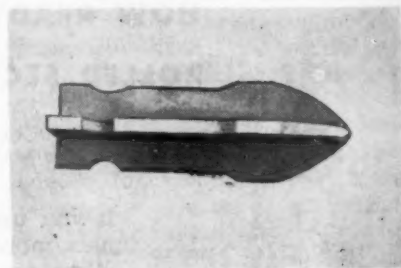
INDUSTRIAL RUBBER PRODUCTS

Vinyl Plastic Replaces Metal For Filtering Acids

Tough, corrosion resistant, rigid vinyl plastic is being used to replace expensive metal alloys in many essential parts of an industrial leaf-type filter used for filtering acids, according to the Hercules Filter Corporation, Paterson, N. J. High corrosion resistance is the main reason why the vinyl plastic was tried in this application. Tests showed that a 140 deg. F. mixture of manganese sulphate and manganese dioxide would eat through stainless steel in a matter of hours. Other special metal alloys with high corrosion resistance are three to four times more expensive than the plastic for this application. In actual operation the mixture to be filtered by the battery manufacturer is circulated through the screens, leaving a heavy lead-like residue deposited on the leaves. These leaves are then removed and the deposited sludge-like material stripped off for re-use.

COST SAVING ITEM—265

Insert Bit Solves Common Production Problem



A new insert bit that has driven over a million 5/8 #7 Holtite-Phillips Twinfast steel screws in the plant of Imperial Dinette Company, Inc., Jersey City, N. J., has solved a production problem common in the industry—that of driving wood screws, without pilot holes, through 1/8" Masonite into plywood to hold steel table slide which supports table top as it is opened and closed.

COST SAVING ITEM—266

50% Fewer Manhours Needed For Finishing

Using a wet blasting method instead of manually finishing tools and other parts prior to chrome plating, Oling Tool Co., South Bend, Ind., has succeeded in saving an
(Please turn to page 414)

in a box" gets stronger every year ... because of EXIDE RESEARCH



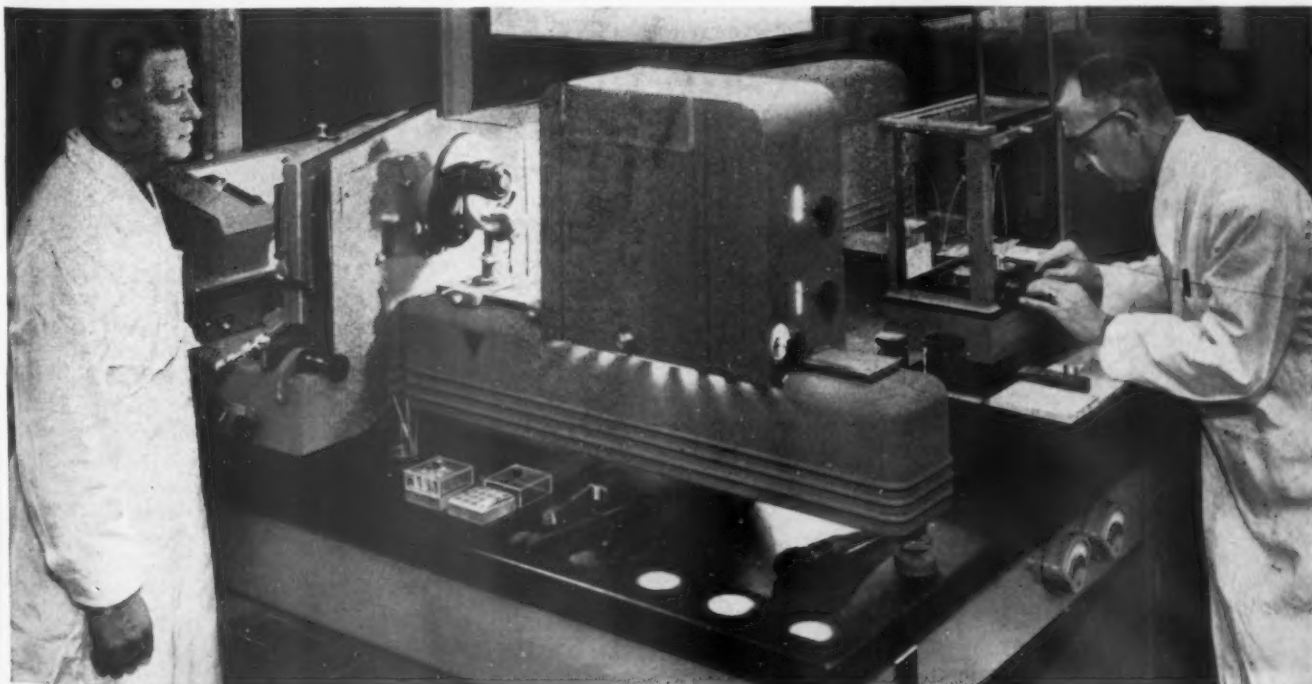
SPECTROPHOTOMETER aids in development and control of many materials used in battery manufacture.



QUALITY CONTROL tests are made of each component of Exide Batteries at each step of production.



LIFE CYCLE tests in the laboratory help us to determine the useful life of our products.



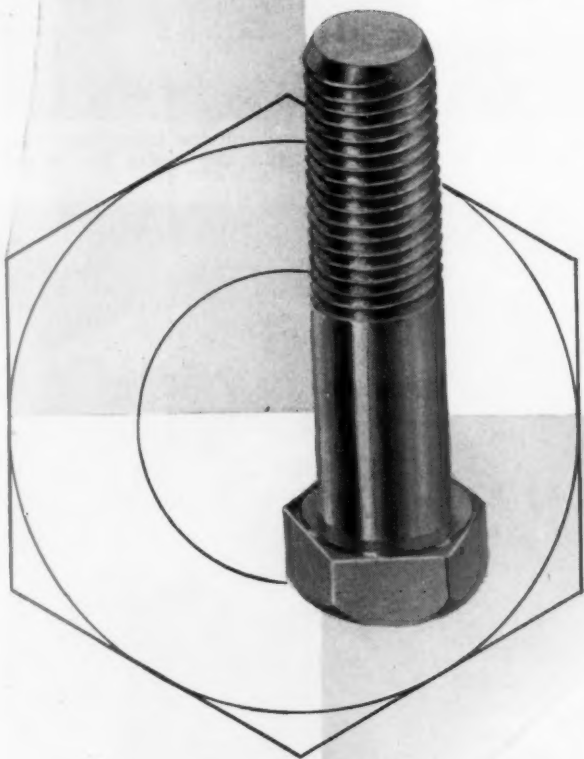
SPECTROGRAPHIC analysis is used for quality control of metals and other elements in our products.

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 2 • Exide Batteries of Canada, Limited, Toronto

First in stainless steel fastenings

INDUSTRIAL EQUIPMENT manufacturers count on Anti-Corrosive for fast, dependable service on all types of stainless steel fastenings. They know that our IN STOCK inventory of more than 8,000 items and sizes is the largest, most complete, in the industry. In addition, our production capacity is geared to produce large or small quantities of stainless fastenings, of every size and description, faster and more economically!

Write for Catalog 53P today.



ANTI-CORROSIVE METAL PRODUCTS CO., INC.

Castleton-on-Hudson
New York

(Continued from page 412)

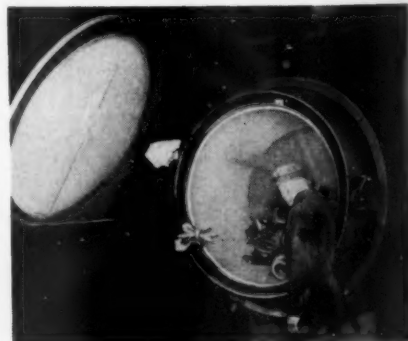
average of 50% in manhour requirements. Savings up to 80% have been effected on finishing drills, 20 to 25 of which are now surfaced in the time formerly needed



to process only five or six. The new method has made it possible to produce a better performing tool, by applying a matte surface after plating for retention of lubricants.

COST SAVING ITEM—267

Rubber Faced Steel Plate Ends Abrasion Trouble



At the C & G Foundry, Indianapolis, Indiana, the shot blast machine shown is used for cleaning castings.

The shot, striking with high velocity against the metal lining in the drum, was so abrasive that the metal liners had to be replaced at least every six months.

The company decided to use a rubber lining to prolong the life of the drum. The company reports, "We have been using the rubber faced steel plate liner 16 to 18 hours a day for over 13 months and there are still no signs of wear. And there is another saving that we had not counted on—the shot itself is lasting about 30% longer."

COST SAVING ITEM—268



SPANG

Here are 6 reasons why you should
specify **SPANG** CW steel pipe
for heating...air conditioning...plumbing

1

Top Grade Steel—Spang's steel requirements call for steel skelp made to rigid metallurgical and physical specifications, giving it inherent qualities that contribute to easy bending and threading of the finished pipe.

2

Quality-Controlled Processing—Automatic controls governing the three heat zones under predetermined conditions permit heating the skelp gradually and progressively to the correct welding temperature. The skelp is kept free of dirt and foreign matter.

3

Strong, Clean, Uniform Welds—Quality controlled heating to the right temperature assures highest quality welds and strength in the finished pipe. Skelp is air-blasted to remove loose scale prior to welding.

4

Smooth, Clean Finish—Spang CW is de-scaled inside and outside, producing a clean and neat-appearing surface and providing closer bonding and longer life for galvanized coatings.

5

Uniform Diameter—Careful sizing and straightening of quality-controlled Spang CW Pipe gives it a uniform diameter which makes it easier to thread, bend and fabricate on the job or in the shop.

6

Complete Inspection and Testing—Each length of Spang CW Pipe is inspected inside and outside; threads are checked for pitch, length and quality. Spang CW is pressure-tested and hydro-static-tested above actual required working pressures to check weld strength and pipe durability.

It's reasons like these that make Spang CW Steel Pipe the first choice of owners, architects, engineers and contractors who want the best in heating, plumbing and air conditioning systems. They know that Spang CW pays off in extra reliability, faster installations and lower costs.

You can profit, too, by specifying Spang CW Steel Pipe at your local Spang distributor.



SPANG-CHALFANT

DIVISION OF THE NATIONAL SUPPLY COMPANY

General Sales Office: Pittsburgh 30, Pa. District Sales Offices: Atlanta, Boston, Detroit, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, St. Louis.

The cost is in Pennies—



—but the results are in Dollars!



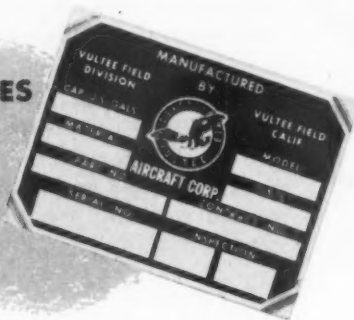
Never underestimate the importance of name plates on your product! Their worth is far out of proportion to the few pennies they add to your costs. As the "signature" on a product, the appearance of the name plate should reflect the maker's pride; its durability should match the quality of the product.

NAME PLATES THAT REFLECT QUALITY



INSTRUCTION PLATES PERMANENTLY READABLE

We have the experience, the skilled craftsmanship, plus the latest and best equipment to produce high quality metal plates—to provide standout identification at the right price. We produce instruction plates that are clearly and easily readable—and stay that way for the life of the product. Quality plates will pay you dividends.



ALUMINUM ANODIZING

We are equipped to apply this protective coating to aluminum parts and products, by the exclusive Alumilite process—in a wide range of attractive colors. Write for quotation.



Write for this
Booklet!

GET OUR QUOTATION

Send a rough sketch, blue print or sample, with specifications, for quotation. Or write us fully about your requirements in name plates, instruction plates, dials, panels, scales, etc.

Write for our new book, "Etched or Lithographed Metal Products of Quality," containing full color examples.

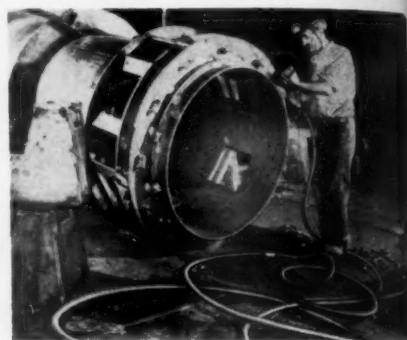
CHICAGO THRIFT-ETCHING CORPORATION

1555 NORTH SHEFFIELD AVE., CHICAGO 22, ILL., DEPT. C

Metal Name Plates, Dials and Panels, Etched or Lithographed • Etched Metal Scales, Clock Dials, Trophy Plates, Plaques, Advertising Specialties • Etched Metal Panels for elevator and architectural uses • Coin Banks • Lithographed or Screened Plastic Name Plates or Dials • Aluminum Anodizing by the Alumilite Process.

SUBSIDIARY OF DODGE MANUFACTURING CORPORATION, MISHAWAKA, INDIANA

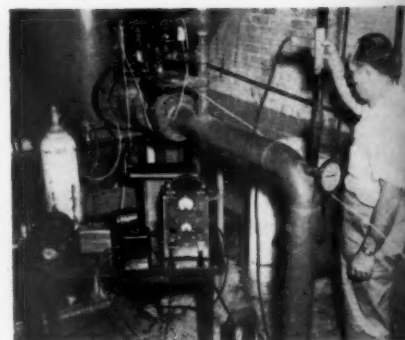
Air Hose Saves Manhours



The Consolidated Engineering and Manufacturing Co., Oakland, Calif., found that its highly paid iron workers spent about 1½ hours each day, or 30 manhours every month, just dragging an old style hose around and keeping it untangled when using compressed air driven grinders. The old hose has been replaced with two lengths of a new hose, one a 30 ft. length of ¾" hose coupled to another 20 ft. length of ¼" hose which is connected to the grinder to provide greater flexibility. When pressure is poured into this hose it does not whip, kink or tangle.

COST SAVING ITEM—269

Deodorizing System Shut-Downs Eliminated



A small piston-like leak detector ends the need for the shut-down of a deodorizing system processing more than 10,000 lb. of vegetable oil an hour at the Sherman, Texas, plant of Mrs. Tucker's Foods, Inc. Formerly leaks were found by shutting-down, applying pressure to the vessels, and painting suspected leak locations with soap solution. Now a workman sprays the system with freon gas. If there is a leak the freon is drawn into the system and is taken to the leak detector installed in the exhaust pipe. The device reacts to the freon and sounds a horn. Position of workman at time shows approximate location of leak.

COST SAVING ITEM—270

You get ALL these Features when you buy PET Drills!

Reserve Power—for the extra-
tough job.
Powerful, Continuous-Duty
Motors—built in PET's own
factory. Dynamic-
ally Balanced Arm-
atures—for freedom
from vibration.

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SING

Compact Design—
makes hard-to-
reach drilling jobs
easier and faster.

Aluminum-Alloy Die
Castings—for light
weight, easy han-
dling.

Forced Ventilation—
for cool running.

Precision-Cut, Heat-
Treated Gears—for
smooth, quiet power
flow.

Six Heavy-Duty Ball and
Needle Bearings;

If you want the
best for your main-
tenance or production
work, take an extra look at
the PET Superduty Drill
shown here. Check its features!
Here's a drill that's made for
heavy, continuous duty...with *plus*
power per pound... built to *work*
right and *handle* right on the job.

Normally you might expect to pay ex-
tra for such features—in the form of
"optionals" that jack up your cost. But
that's not true of PET Drills! All these
features are standard in the PET Super-
duty line... and they're available to you at
a standard drill price! That's why the cou-
pon below can save money for you. For
free catalog and name of your nearest PET
distributor, mail it today!

NOW...you can get the RIGHT DRILL for YOUR job!

PET Superduty Drills are avail-
able in 54 distinct models and 3
capacities: $\frac{1}{4}$ ", $\frac{3}{8}$ " and $\frac{1}{2}$ ". Your
choice of pistol or saw-type grip.
With such a broad line, you
don't have to compromise on a

drill that's "almost" right! You
can choose *exactly* the drill you
need for your job. The PET
Superduty line includes drills
meeting U. S. Government and
military specifications.



**Plus Power
per Pound**

PORTABLE ELECTRIC TOOLS, INC.

320 West 83rd Street, Chicago 20, Illinois

In Canada: Portable Electric Tools, Ltd.,
452 Birchmount Road, Toronto 13, Ontario, Canada

MAIL COUPON FOR FULL INFORMATION

PORTABLE ELECTRIC TOOLS, INC.
320 W. 83rd St., Chicago 20, Ill.

P-53

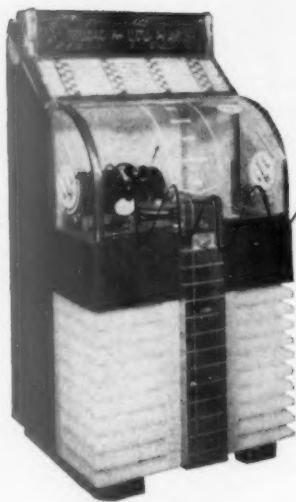
Gentlemen: Please send us free copy of your
PET Superduty catalog, and name of nearest
distributor.

Name _____ Title _____

Company _____

Address _____

City _____ State _____



another EMC Motor application

AMI juke boxes

AMI, nationally famous juke box manufacturer, uses EMC motor parts sets for both carriage drive and record transfer drive assembly for their Model "B" units. Chances are you've dropped a few nickels in AMI units and both seen and heard the machine operate. EMC motor parts sets play an important part in the smooth functioning of this precision juke box.

EMC and CYCLOHM fractional h. p. motors are used by many manufacturers of coin operated devices as well as hundreds of other applications—business machines, sewing machines, mixers, fans, blowers, radar, jet aircraft, tape recorders, portable tools, appliances and others. Whatever your application, if you use fractional h. p. motors or motor parts sets, check your requirements with Howard today. Your inquiry will be given prompt attention.



HOWARD

DEPT. PM-2 • HOWARD INDUSTRIES, INC. • RACINE, WISCONSIN

DIVISIONS: **EMC** EMC MOTOR CORP.  **CYCLOHM** MOTOR CORP.

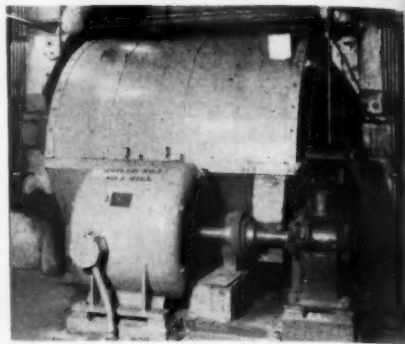
Universal and Direct Current
(1/1000 to 1/2 h. p.)

Shaded Pole
(1/2000 to 1/15 h. p.)

Induction Types
(1/1400 to 1/4 h. p.)

*You can tell a motor
by the company it keeps!*

Specialized Lubricant Cuts Grease Consumption 6 to 1



In a midwestern Municipal Light Plant the bearings of six Ball Mills—each of which pulverizes about 19,000 pounds of coal per hour—were wearing down fast. The superintendent experimented with a specialized brick grease by applying it on one end of the pulverizers and his regular grease on the other end. The test revealed a consumption rate of well over 6 to 1 in favor of the specialized grease.

COST SAVING ITEM—271

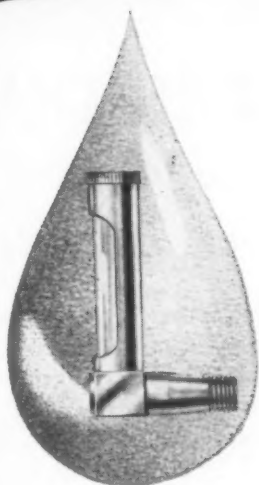
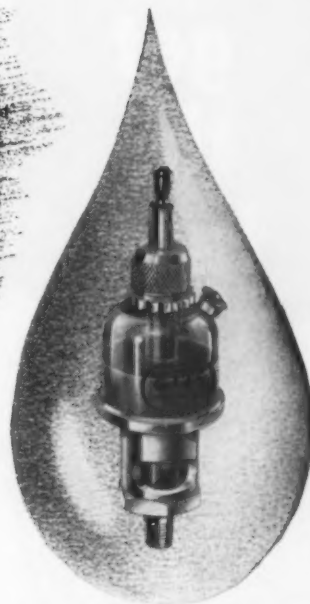
Cleaning Time Reduced by 29 Manhours



Eclipse Lawn Mower Co., Prophetstown, Ill., saves 29 manhours in cleaning 3,000 lawn mower parts by using a rotating-table, blast cleaning unit employing centrifugally-hurled abrasives instead of a tumbling mill and air blast barrel as previously. The cleaning table is operated by two workmen. One places the castings on the continuously rotating tables; the other takes them off after they have passed under the blast stream.

COST SAVING ITEM—272

For Lubricating Devices
Call On
GITS First!



GITS Bros. covers the *entire range* of lubricating devices: Oil Hole Covers, Oil Cups, Grease Cups, Bottle Oilers, Gauges. Gravity-Feed, Wick-Feed, Constant Level, Vibrating Rod styles. Threaded or Drive-type. Elbow or Straight.

GITS Bros. offers the most complete selection of standard styles.

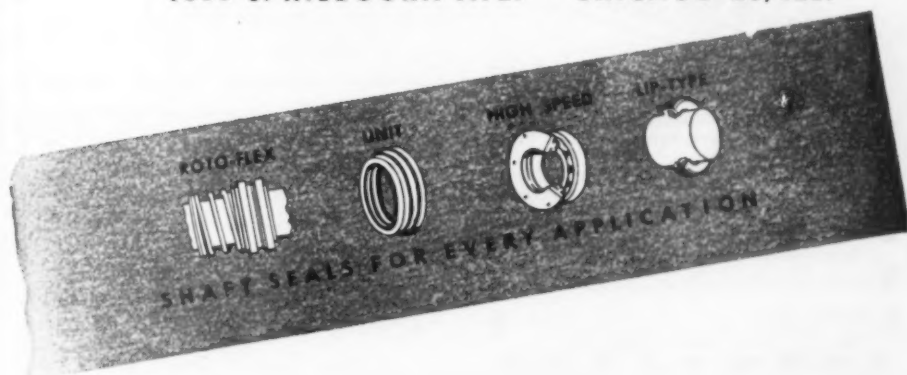
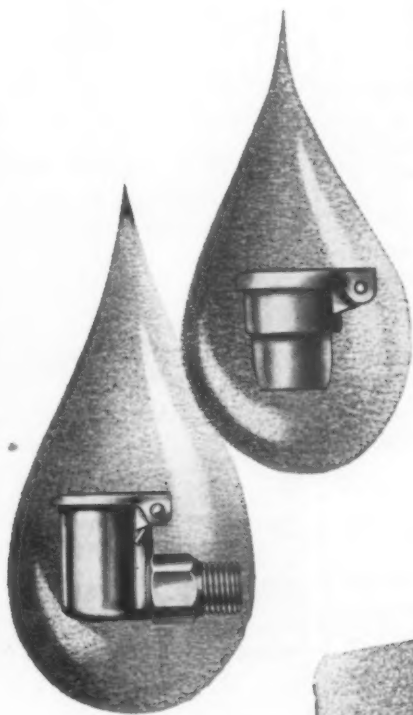
GITS consistent quality in design, materials and machining has made Gits Lubricating Devices the standard for industry for more than 40 years.

GITS Lubricating Devices are far-famed for solving tough oiling problems at low cost.

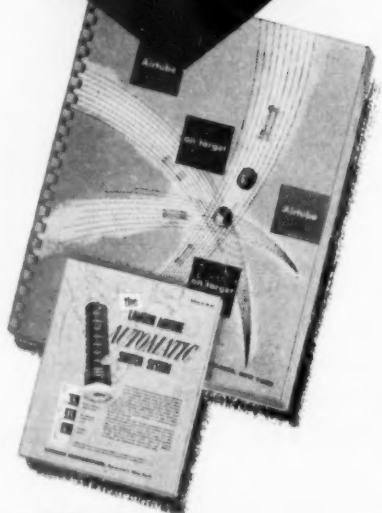
GITS Bros. Engineering Staff—true specialists in lubrication engineering—is at your disposal.

GITS BROS. MFG. CO.

1865 S. KILBOURN AVE. • CHICAGO 23, ILL.



**get
the
facts**



60 informative pages on

LAMSON AIRTUBE SYSTEMS

...gives you profitable ideas for using pneumatic tube systems, both conventional and automatic—including dimensional drawings, architects' data, typical installations, case histories and lots more—all in two handy catalogs.

We have copies for you... just clip this coupon to your signed letter-head and mail.



8803

LAMSON CORPORATION
1705 Lamson Street, Syracuse 1, N. Y.

Gentlemen:
Without any obligation on my part, please send me my copies of the Lamson Airtube Catalog and the Lamson Automatic Switch System Bulletin.

Name _____ Title _____
Company _____
Address _____
City _____ Zone _____ State _____

New Plating System Expected To Stretch Nickel Supply

An entirely new process of nickel plating which greatly stretches the available nickel supply, has been announced by General American Transportation Company. General American will immediately build two new plants, one in East Chicago, Indiana, and the other in Los Angeles, California, to utilize the new process. These plants are expected to be in operation by the third quarter of 1953. Thereafter, other firms will be licensed to use the process.

The new process, which requires no electrolytic equipment, has been named "Kanigen." It promises remarkable economies in many industrial applications over customary methods, and in addition makes it possible to plate almost any solid substance with a dependable and predictable thickness of a superior, non-porous plate. "It is so completely manageable," the company states, "that it opens up vast new possibilities: intricate valves and other products previously impossible to plate successfully, can be covered thoroughly; parts subject to hard wear and abrasion may be continuously coated and hardened far beyond the capacity of the parent metal; over-machined parts may be brought back to proper tolerances; parts previously machined of monel metal and other corrosion-resisting materials can now be of cast steel and plated to a thickness of 3 mils with assurance that the plate will nowhere vary from that thickness—with a consequent saving of expense and critical material."

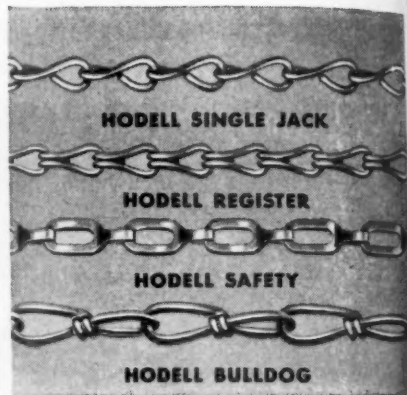
The process, it is claimed, will plate any article uniformly, regardless of size or shape, and has proved satisfactory for the production-line plating of steel, copper, brass, bronze, stainless steel and aluminum. Tests on plastics and magnesium indicate that these materials will prove practical for "Kanigen" plating.

The coverage of "Kanigen" is so complete, it is said, that "its porosity is virtually zero".

Stretches Available Nickel Supply

Because of its greater efficiency this new process will provide important savings in critical nickel, which is extremely important in view of the current shortage of nickel. It is estimated that equivalent plate protection can be achieved with 1/3 to 1/2 the nickel required by other processes, partially because of

(Please turn to page 424)



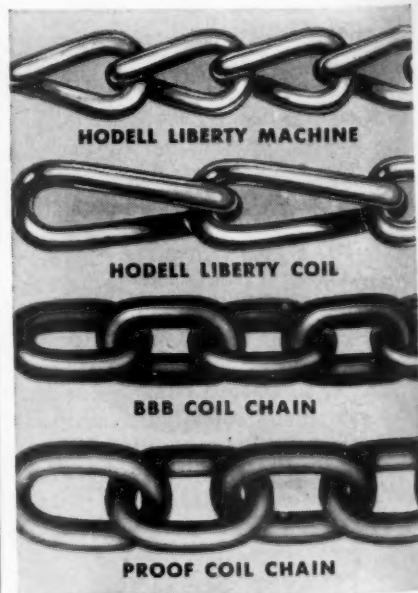
Buy dependable
HODELL CHAIN
in standard types
... or specialties

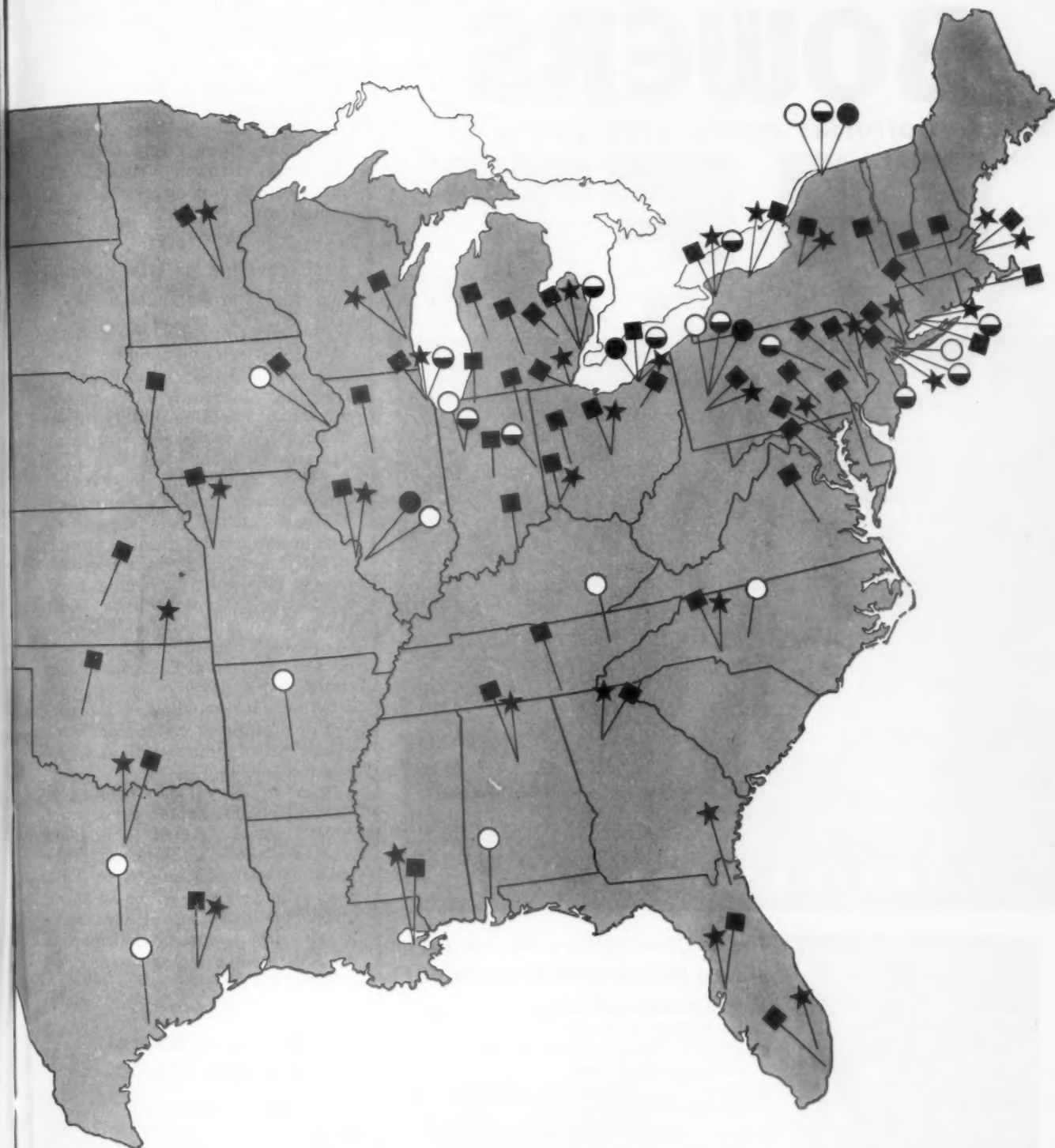
Hodell makes a quality line of dependable chain for every industrial use and can make many formed wire specialties. Or, if you need a special chain assembly, Hodell can manufacture it to your specifications. We welcome an opportunity to quote on your needs at any time. Send for the Hodell Industrial Catalog... giving full information on the complete Hodell line.

HODELL CHAIN COMPANY

Cleveland 3, Ohio

Div. of The National Screw & Mfg. Company





Fluorides, Gallium—
East St. Louis, Ill.

Foil—Alcoa, Tenn.; Edgewater, N. J.;
New Kensington, Pa.

Magnesium Sheet, Plate, Tube—
New Kensington, Pa.

Nails—Edgewater, N. J.

Pig—Wenatchee, Wash.; Point Com-
fort, Texas; Alcoa, Tenn.; Badin,
N. C.; Massena, N. Y.; Rockdale,
Texas; Vancouver, Wash.

Powder and Paste—Alcoa, Tenn.;
New Kensington, Pa.

Rivets—Edgewater, N. J.;
Los Angeles, Calif.

Screw Machine Products—
Edgewater, N. J.

Sheet and Plate—Alcoa, Tenn.;
Davenport, Ia.; Edgewater, N. J.

Tube—Los Angeles, Calif.; New
Kensington, Pa.; Lafayette, Ind.

Wire and Rod—Massena, N. Y.;
Vancouver, Wash.

ENGINEERED PRODUCTS

Aluminum Caps and Seals—
Richmond, Ind.

Aluminum Collapsible Tubes—
Edgewater, N. J.

Aluminum Die Castings—Chicago,
Ill.; Garwood, N. J.

Aluminum Extrusions—Cressona, Pa.;
Los Angeles, Calif.; New Kensing-
ton, Pa.; Lafayette, Ind.

Aluminum Forgings—Cleveland, O.;
Los Angeles, Calif.

Aluminum Impact Extrusions—
Edgewater, N. J.

Aluminum Sand and Permanent
Mold Castings—Bridgeport, Conn.;
Cleveland, O.; Detroit, Mich.;
Los Angeles, Calif.

Aluminum Structural Shapes—
Massena, N. Y.

Jobbing Products—New
Kensington, Pa.

Magnesium Die Castings—
Garwood, N. J.

Magnesium Extrusions—New
Kensington, Pa.

Magnesium Forgings—Cleveland, O.;
Los Angeles, Calif.

Magnesium Permanent Mold
Castings—Los Angeles, Calif.;
Cleveland, O.

Magnesium Sand Castings—Buffalo,
N. Y.; Los Angeles, Calif.

Alcoa

Aluminum

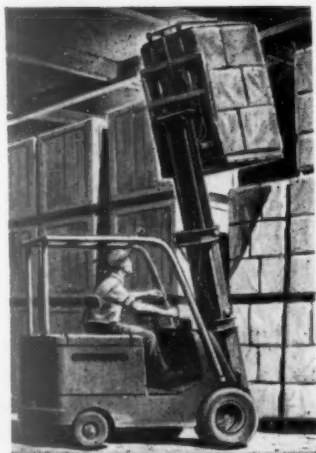
ALUMINUM COMPANY OF AMERICA

1993-E Alcoa Building • Pittsburgh 19, Penna.

BOWERS

batteries really give you a

LIFT



These Construction Advantages provide EXTRA POWER—LONGER!

- A. MODERN POWER GRID minimizes voltage drop at lug—exclusive with Bowers.
- B. SPECIAL FORMULA ACTIVE MATERIAL—high porosity provides full power.
- 1. SLIVER ENVELOPS PLATE ON BOTH SIDES AND BOTTOM, deters plate shedding.
- 2. GLASS FIBER EXPANSION MAT bonded directly to sliver keeps elements tight.
- 3. FIBER GLASS RETAINING MAT holds entire mat structure firmly together.
- 4. PERFORATED HARD RUBBER RETAINER presses sliver and glass mats firmly against plate.
- 5. MICROPOROUS RUBBER SEPARATORS impervious to heat, acid and corrosion.

BOWERS FIVE ⑤ CLAD BATTERIES

for industrial trucks

**built and backed by DEPENDABLE battery specialists
BOWERS BATTERY & SPARK PLUG CO., READING, PA.**

(Continued from page 420)

"Kanigen's" non-porosity, partially because it plates so uniformly that it is unnecessary to overplate in places to assure ample overall plating, and finally because it takes 2 or 3 times more nickel to provide the same corrosion resistance with the electroplating process as is required with "Kanigen."

1 1 1

First Traveling Material Handling Clinic Announced

The first in a series of "Traveling Clinics" on material handling scheduled for 1953 by The Material Handling Institute will convene June 10 at the Hotel Statler in New York at the request of and in cooperation with the New York City and New Jersey Chapters, American Material Handling Society.

Details of the first clinic were announced at the Spring meeting of MHI in Chicago to representatives of 79 member companies by C. B. Elledge (General Electric Co.), chairman of the MHI-AMHS Co-Operation Committee. The purpose of the Traveling Clinics, Elledge stated, is to develop among users a better understanding of the correct application of material handling equipment to industry's most pressing problems.

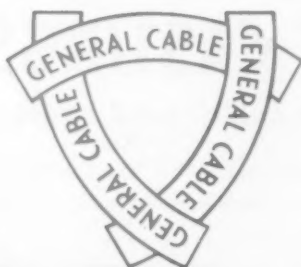
Prior to the all-day meeting of the first clinic, chapter members of AMHS will be polled to find out what are the most pressing problems of users in the New York area. The poll is now being taken under the direction of Cynamid's A. K. Strong who is chairman of the AMHS clinic arrangements committee.

1 1 1

Cushioning Material May Save 33 1/3%

The serviceability of bonded shredded cellular rubber cushioning has been revealed by recent tests at the N.Y. Naval Shipyard with the development of a new material primarily derived from latex foam and scrap. The material is the result of a process of grinding selected odd and normal scrap materials from straight latex foam manufacturers. Coated with rubber binding, cured in molds to the desired shape and density, the material has the same resiliency and odorless properties of straight latex foam. It resists vermin and mildew and withstands wet cleaning. The material is expected to save one-third usual cushioning costs.

NATIONAL PRODUCTION...



GENERAL CABLE

*Still means Consistent
Dependable Supply*



During a 70 year span as a prime supplier of wire and cable to every industry, General Cable's growth has been part of America's ever-mounting national production. Anticipating production trends—with our sights always toward growth—our production is planned for smooth, adequate supply. Evidence is in the thousands of varied wires and cables manufactured in the chain of strategically located General Cable manufacturing plants. Your needs are serviced through our sales offices . . . through our wholesalers . . . from plants, warehouses, and distributor stocks that blanket the country from coast to coast, and from our northern border to the Gulf of Mexico.

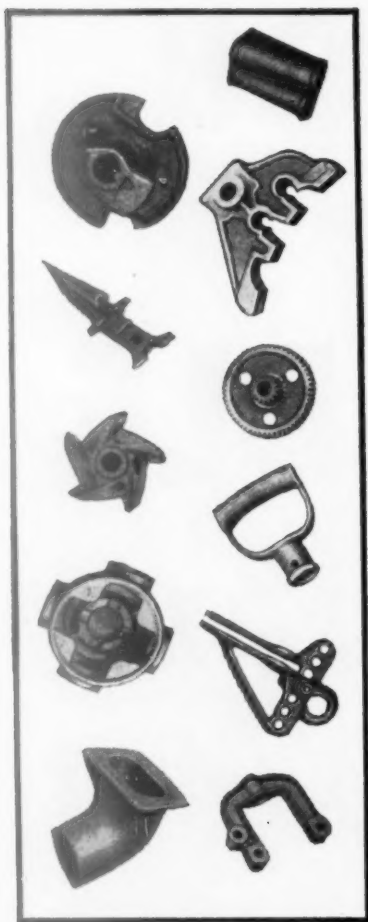


"More Power to You"



GENERAL CABLE
C O R P O R A T I O N

EXECUTIVE OFFICE: 420 LEXINGTON AVENUE, NEW YORK 17, NEW YORK • SALES OFFICES IN PRINCIPAL CITIES OF THE UNITED STATES



MALLEABLE IRON CASTINGS

that you can depend upon!

The right connection—for the malleable iron parts you need—can be a source of satisfaction to you.

Many, many leading makers of durable goods use Moline Iron Works Malleable Iron Castings to uphold the quality of their products.

Good service, quality control and reasonable prices are three reasons why your connection with Moline Iron Works can be both a pleasant and profitable one. We invite your specifications for quotation.

WE SHIP QUICK!
Phone 4-5676 for Service

The parts shown here are representative of our production for automotive, farm implement, appliance and railroad customers.

MOLINE IRON WORKS
Moline, Illinois, U. S. A.



New Fiber Drum Saves Navy \$30,000 a Year

A new fiber drum for moisture proof shipments, tested by the Department of Agriculture, has been adopted by the Navy for domestic shipment of desiccants by Navy contractors. Steel, formerly, was required for this purpose. The drum contains a special aluminum foil barrier buried in the bottom and sidewall. The top is of metal. Tests proved no significant difference in steel and fiber drums exposed to high humidity conditions. The fiber drum performed satisfactorily in rough handling tests. Annual savings in shipping costs with the new drum are estimated at about \$30,000 annually per company.

1 1 1

Says U. S. Industry Must Invest \$200 Billion

American industry will have to invest by 1960 about \$200 billion, nearly as much as was invested in the last 30 years, if it is to achieve adequate output, with the working force available, to maintain our high standard of living. That was the word given by Dean E. Carson, director of business research for the B. F. Goodrich Company, in a recent address before Eastern Industrial Advertisers.

Speaking on the subject of business looking ahead, Carson pointed out that studies by his company indicated the total population of the U. S. by 1960 would be 174 million people, an increase of about 15 percent from 1950. This population increase will be mainly an addition to the consuming group rather than to the producing group. Those at work will be faced with the task of supporting a much larger number of people than in any previous period in our history. Except in periods of adjustment, the demand for labor should be so great that all those who are able and willing to work should have little difficulty in finding jobs.

But in achieving more productivity, the BFG executive said, every American worker must be provided with more effective tools. These tools will cost an enormous amount of money—\$200 billion worth. Compare this with the \$71 billion spent for new plants and equipment in the 1920's, or with the \$110 billion invested by industry in the 1940's when this country built an undreamed of productive capacity for war and peace.

(Please turn to page 432)

SALESMEN CALL THEM...

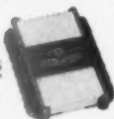


... because they get business—even when the salesman isn't there! Beautifully imprinted with your company name, trademark or sales message, quality GITS products keep customers reminded between calls... promote sales and buyer goodwill. Mail coupon for FREE GITS Razor-Knife and name of our nearest Advertising Specialty Jobber who will show samples, quote quantity prices, and suggest plans.



**Business
Getters**

NO. 1375
"MEMO CASE"
150 3x5 sheets



NO. 222
KNIFE SHARPENER
Ideal for home and office



NO. 377
"PAR-KIT"
coin holder
key chain,
ice scraper



NO. 122
"RIGHT ANGLE"
FLASHLIGHT
NO. 100
STRAIGHT
FLASHLIGHT

FREE!

...to executives (Attach letterhead)

GITS MOLDING CORPORATION

4600 W. Huron St., Chicago 44, Ill.

Send me a free GITS Razor-Knife and name of local Advertising Specialty Jobber.

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____ P553

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CLEVELAND

NEW
VISIT THE HOLLENDEN...
COMPLETELY REDECORATED!

- ★ 1000 ROOMS WITH BATH
- ★ RADIO IN EVERY ROOM
- ★ SIX FINE RESTAURANTS
- ★ CENTRAL DOWNTOWN LOCATION
- ★ GARAGE ATTACHED

HOTEL HOLLENDEN

Robert P. Joyce, General Manager



Home of the
famous
Vogue Room



● ENDURO . . . truly the versatile, thrifty metal of 10,000 uses.

Stamp, spin, bend, draw, roll-form, weld, solder, emboss, etch or buff ENDURO without difficulty. And, what have you? . . . a permanently bright, sparkling end result that adds eye-appeal and buy-appeal to your product.

Get set to sell with this *plus* merchandising factor. We'll be glad to work with you. Just write:

REPUBLIC STEEL CORPORATION

Alloy Steel Division • Massillon, Ohio

GENERAL OFFICES • CLEVELAND 1, OHIO

Export Department: Chrysler Building, New York 17, N. Y.



Republic
ENDURO STAINLESS STEEL

Other Republic Products include Upson Bolts, Studs, Nuts and Rivets—Pipe—Sheets—Plates—Electronite Heat Exchanger Tubes



ICE IN THE BAG. Yes, you can buy ice in sturdy paper bags. The bags, in this case, were once closed with twists of wire. But the local Bostitch economy man showed the ice manu-

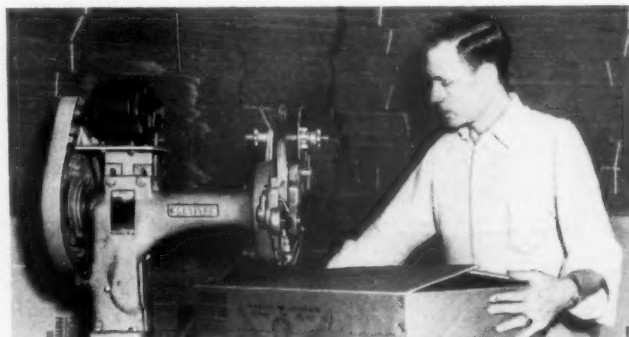
facturer how much better looking, stronger, and more salable staple-sealed bags are. Now all ice plants in the chain use Bostitch stapling pliers to close ice bags.

BAGGING ICE... OR BOXING A FOREST...

BOSTITCH DOES IT BETTER AND FASTER!

YOUR CHRISTMAS TREE arrives in a big corrugated container when you order it from this famous Northwest packer. The bottoms of the boxes are closed with a Bostitch wire stitcher. The Bostitch method saves packing

time, cuts material costs, eliminates losses due to moisture-loosened seals. Boxes can be made up as needed—no storage problem. Bostitch could save time and money in *your* shipping room, too.



FREE BULLETIN describes 30 of the 800 Bostitch models most often used for wrapping, packing and container closing. Send coupon.

THERE'S A BOSTITCH MAN NEAR YOU—300 fieldmen in 123 cities in the U. S. and Canada. Bostitch service is always nearby.

BOSTITCH

725 Mechanic Street, Westerly, R. I.

Please send me a free copy of your bulletin on Bostitch stapling machines for shipping-room use.

I am particularly interested in a better and faster method for:

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|---|---|
| <input type="checkbox"/> Assembling cartons | <input type="checkbox"/> Repairing cartons for re-use |
| <input type="checkbox"/> Bottoming | <input type="checkbox"/> Bag-sealing |
| <input type="checkbox"/> Top-sealing | |

- | | |
|--|---|
| <input type="checkbox"/> Sealing corrugated wrappers | <input type="checkbox"/> Covering barrels |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Tagging |

Name _____
Company _____
Address _____
City _____ Zone _____ State _____

BOSTITCH®

AND FASTER
fastens it better with wire

ALL TYPES OF MACHINES FOR APPLYING STAPLES
ALL TYPES OF STAPLES APPLIED BY MACHINES

(Continued from page 428)

The new administration's policy of relaxing controls over many materials is one of the most encouraging signs for business in general, Carson said. Under such policies, our business and our country can continue to progress through producing better and better goods at lower and lower costs to the consumer, thus broadening markets, increasing employment opportunities, and bringing a steadily rising standard of living.

Low-Cycle Induction Heating Offers Big Time Savings

Using ordinary household electric power, Aluminum Company of America has succeeded in heating a 7700-lb. aluminum ingot to working temperatures nearly 15 times faster than it could be done in a conventional furnace. The announcement came today from Donald I. Bohn, Alcoa's chief electrical engineer.

Mr. Bohn said the new technique of 60-cycle induction heating will be invaluable in heavy press production of big aircraft aluminum forging and extrusions.

Until this low-cycle method was developed, Alcoa used conventional methods, such as soaking pits or other furnaces, in all its operations to bring ingots to proper forging or extrusion temperatures.

Heating a 7700-pound aluminum ingot to 750 degrees, Fahrenheit, by conventional means, requires about 12 hours, as compared with the 50 minutes for the low-frequency induction method.

In essence, the new method consists of placing an unheated ingot in a specially designed electrical coil.

Electric energy of commercial frequency is then applied to the coil. The electric current flowing through the coil induces a heavy current in the ingot itself, and this produces the temperature rise in the metal.

Mr. Bohn said Alcoa's low-cycle induction heating method compares favorably with installation and operating costs of conventional equipment.

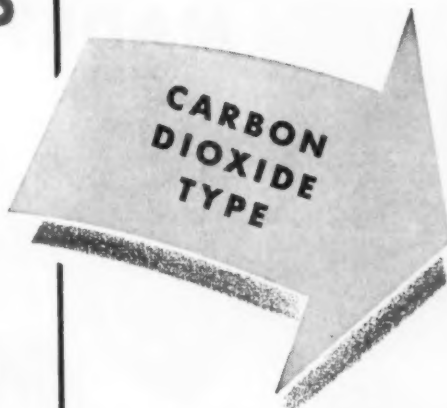
Induction heating, he added, permits use of equipment smaller than conventional methods require. The induction heating method provides increased flexibility in operation of big forging or extrusion equipment.

Mr. Bohn said the coil also can be used for annealing and heat-treating fabricated products.



FIRE EXTINGUISHERS

*give
fast, positive
fire protection*



With C-O-TWO Squeeze-Grip Carbon Dioxide Type Fire Extinguishers the penetrating carbon dioxide is a clean, dry, non-damaging, non-conducting inert gas... smothers fire in seconds, leaves no after fire mess... highly effective on flammable liquid and electrical fires, as well as some surface fires involving ordinary combustible materials. The C-O-TWO Squeeze-Grip Valve is the greatest single contribution to the releasing of carbon dioxide for first aid fire fighting... just squeeze lever to open... release to close.

Convenient 2½, 5, 10, 15 and 20 pound hand sizes... discharge horn non-conducting, shatterproof construction. Also, convenient 50, 75 and 100 pound wheeled sizes... available with sturdy, wide-faced wheels either with or without rubber tires, as well as available with or without discharge hose and horn protection cover.



With C-O-TWO Dry Chemical Type Fire Extinguishers the heat-shielding dry chemical is a non-conducting, non-abrasive, non-toxic, finely pulverized powder compound... blankets fire instantly... exceedingly effective on flammable liquid, gas and electrical fires, as well as surface fires involving ordinary combustible materials. The exclusive inverting design renders constant free flowing dry chemical, assuring faster, more effective and complete discharge.

Convenient 4, 20 and 30 pound hand sizes... no syphon tubes or valves within the cylinder to

become clogged or inoperative... discharge hose and squeeze type discharge nozzle remain empty until actuation takes place... one piece removable top assembly. Also, convenient 150 pound wheeled size... sturdy, wide-faced wheels... discharge hose and two position discharge nozzle having soft or solid stream fully enclosed in protection casing... footrail and dual bar handle provide easy inverting.

Act now for complete free information on these fast, positive fire extinguishers. Remember fire doesn't wait... get the facts today!



MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

Squeeze-Grip Carbon Dioxide Type Fire Extinguishers
Dry Chemical Type Fire Extinguishers
Built-In High Pressure and Low Pressure Carbon Dioxide
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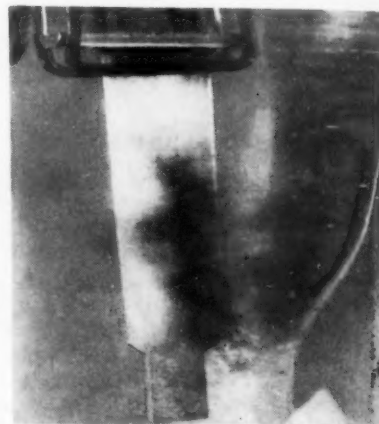
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GRAPHITED

Announce Practical Method of Ultrasonic Cleaning

The Detrex Corporation of Detroit, Mich., manufacturer of industrial cleaning equipment and chemicals, has announced the development of an advanced, practical method of metal cleaning through the use of ultrasonic waves.



Foreign matter adhering to the surface of a jet engine blade is shown here as it is almost literally "exploded" away by ultrasonic waves.

The new method, known as the Detrex Soniclean Process, features a man-made element for directing sound energy—a development which Detrex technicians say opens the door to far-reaching advances in a wide variety of industrial fields.

"Use of the new transducer element unquestionably takes ultrasonic cleaning out of the laboratory 'dream' stage and makes it a production reality," W. F. Newbery, director of sales for Detrex, said in announcing the new process. "By employing this new element in place of the quartz crystals previously used in ultrasonic experiments, we have overcome the limitations caused by the size and properties of quartz."

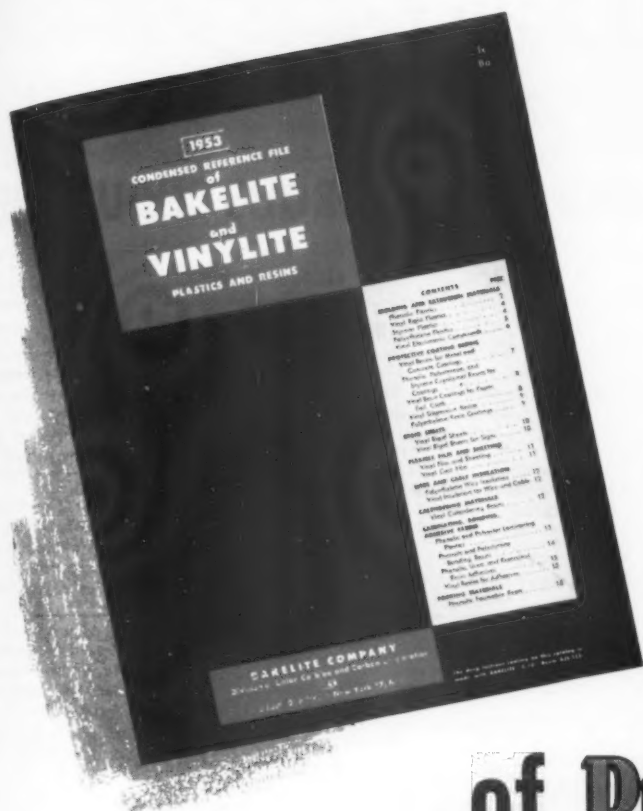
1 1 1

Much Data Developed on Glass Fabric-Polyester Laminates

A large volume of technical data on the physical properties of glass fabric-polyester laminates has been developed in a series of tests undertaken jointly by Libbey-Owens-Ford Glass Company and eight large weavers of fiber glass cloth for the Wright Air Development Center of the U. S. Air Force at Dayton.

The task is estimated to have saved the Air Force at least \$70,000 and given it the basis for new

(Please turn to page 438)



to the readers of **PURCHASING** this booklet is a must!

45% of the readers of **PURCHASING** covered in a recent survey* are buyers of plastics and resins. This represents a growth of 12% since a survey made three years ago. If you're in this group, you need this booklet.

If you're in the rapidly diminishing 55%, the booklet will acquaint you with important developments in plastics that soon may be a big factor in the improvement of your product or services.

In concise, non-technical language, the booklet, "1953 Condensed Reference File of **BAKELITE** and **VINYLTE** Plastics and Resins," describes phenolic, polystyrene, vinyl, and polyethylene

plastics. Its 16 pages cover molding and extrusion materials, laminating materials, sheeting and film, rigid sheets, calendaring resins, bonding materials, coating resins, wire and cable insulation. It's packed with illustrations that show typical uses.

It also includes the addresses of all Bakelite Company sales offices, located in principal cities throughout the country. Their sales and technical staffs are ready to assist you in the selection of the proper plastics and resins for your needs.

Mail the coupon for your copy today. It is available to you at no cost.

Some other facts uncovered by this survey:

- 38% of respondents who buy plastics specify them by types.
- 45% specify plastics by manufacturers' product numbers.
- 37% specify plastics by brand names.

Visit Bakelite Company's exhibit at the Basic Materials Show, Grand Central Palace, New York, N. Y. June 15-19.

*Survey of 2000 subscribers to **PURCHASING** magazine, November 6, 1952

BAKELITE COMPANY, Dept. QF-25
A Division of Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y.

Please send me without cost or obligation, booklet G-19, "1953 Condensed Reference File of **BAKELITE** and **VINYLTE** Plastics and Resins."

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ELECTROMET *Data Sheet*

Published by Electro Metallurgical Company, A Division of Union Carbide and Carbon Corporation, 30 East 42nd Street, New York 17, N. Y. In Canada: Electro Metallurgical Company of Canada, Limited, Welland, Ontario.

ALLOYS FOR THE STEEL, IRON, AND NON-FERROUS INDUSTRIES

PRODUCT*	NOMINAL COMPOSITION	USES	PRODUCT*	NOMINAL COMPOSITION	USES
BORON ALLOYS			CHROMIUM ALLOYS cont.		
Ferroboron Min. 10.00% Boron Grade	Aluminum.....max. 0.50% Carbon.....max. 1.50%	Increases hardenability of steel; also, for additions to malleable iron and aluminum alloys.	Exothermic Silicon-Chrome	Chromium... 46% approx. Silicon..... 23% approx. Carbon..... 1.00% max.	An improved exothermic ladle alloy with high solubility, very low carbon pickup, and high ignition temperature.
Manganese-Boron Min. 17.50% Boron Grade	Aluminum... max. 0.50% Carbon.....max. 0.50%		Foundry Ferrochrome High-Carbon Grade	Chromium..... 62 to 66% Silicon..... 7 to 10% Carbon..... 5 to 7%	Developed especially for high-solubility ladle additions of chromium to improve composition and properties of cast iron.
Nickel-Boron	Boron.....min. 17.50% Manganese... approx. 75% Carbon.....max. 3% Iron.....max. 5%	Used to cleanse and deoxidize non-ferrous alloys.	Low-Carbon Grade	Chromium..... 50 to 54% Silicon..... 28 to 32% Carbon.....max. 1.25%	
Boron Carbide	Boron.....15 to 18% Carbon.....max. 0.50% Iron.....max. 3.00% Nickel.....Balance	Special boron alloy used principally for deoxidizing nickel and its alloys.	Chromium Metal Low-Carbon Grades	Chromium.....min. 97% Carbon.....max. 0.10% and 0.50% Iron.....max. 1%	Production of wide variety of non-ferrous chromium-bearing alloys, including electrical resistance alloys and high-temperature alloys.
Calcium Boride	Boron.....42 to 48% Carbon.....45 to 52%	Deoxidizer for non-ferrous alloys.	High-Carbon Grade	Chromium.....87 to 90% Carbon.....9 to 11% Iron.....max. 1.25%	
Calcium Boride	Boron.....38 to 42% Calcium.....27 to 32% Carbon.....15 to 20%	Welding rod coating.	Electrolytic	Chromium.....min. 99%	
CALCIUM ALLOYS			"EM" Ferrochrome-Silicon	Chromium.....39 to 41% Silicon.....42 to 46% Carbon.....max. 0.05%	Used in production of stainless steel to reduce metal oxides from the slag back into bath.
Calcium-Silicon	Calcium.....30 to 33% Silicon.....60 to 65% Iron.....1.50 to 3%	Deoxidizer for quality ingot steel. Also used in high-tensile gray irons.	"EM" Ferrosilicon-Chrome	Chromium.....50 to 54% Silicon.....28 to 32% Carbon.....max. 1.25%	For adding chromium and silicon to steels containing up to 1 or 2 per cent chromium.
Calcium-Manganese-Silicon	Calcium.....16 to 20% Manganese.....14 to 18% Silicon.....53 to 59%	A complex deoxidizer used widely in production of steel castings.	"EM" Chromium Briquets (Hexagonal Shape)	Chromium.....2 lb. Total Weight.....3 3/4 lb.	For adding chromium to cast iron in the cupola.
Calcium Metal Regular Grade	Calcium.....98% (Cylinders, Slabs, Cut Pieces, or Turnings)	Reducing agent in metallurgical applications, deoxidizer and degasifier for non-ferrous metals.	COLUMBIUM ALLOYS		
Distilled Grade	Calcium... approx. 99.90% (Irregular pieces from pea size to 14 in. lumps)	For special applications requiring calcium of very high purity.	Ferrocolumbium	Columbium.....50 to 60% Silicon.....max. 8% Carbon.....max. 0.40%	Stabilizer in austenitic chromium-nickel stainless steels. Also constituent of high-temperature alloys.
CHROMIUM ALLOYS			Ferrotantalum-Columbium	Columbium... approx. 40% Tantalum... approx. 20% Cb+Ta.....min. 60% Silicon.....4 to 6% Carbon.....max. 0.30%	Stabilizer used to supplement ferrocolumbium in chromium-nickel stainless steels. Also used in high-temperature alloys.
"Simplex" Low-Carbon Ferrochrome	Chromium.....63 to 66% Silicon.....5 to 7% Carbon.....max. 0.025%	For producing stainless steel, particularly the low-carbon grades. The silicon in the alloy reduces metal oxides from the slag back into the bath. Rapid solubility of the alloy saves furnace time.	MANGANESE ALLOYS		
Low-Carbon Ferrochrome (Other Grades)	Chromium.....67 to 71% Silicon.....0.30 to 1.00% Carbon (10 Grades) max. 0.03 to max. 2.00%	Production of stainless steels and high-temperature alloys requiring low carbon content.	Standard Ferromanganese Regular Grade	Manganese.....78 to 82% Carbon.....approx. 7% Silicon.....max. 1%	Most common means of adding manganese to steel for both alloying and deoxidizing purposes. Also for counteracting sulphur in steel and cast iron.
High-Carbon Ferrochrome Max. 4.50, 5.00, or 6.00% Carbon Grade	Chromium.....67 to 70% Silicon.....1 to 2%	For production of engineering alloy steels and other alloy steels of moderate chromium content.	Low-Phosphorus Grade	Manganese.....78 to 82% Carbon.....max. 7% Silicon.....max. 2% Phosphorus... max. 0.10%	
Max. 7.00% Carbon Grade	Chromium.....66 to 69% Silicon.....1 to 3%		Low-Carbon Ferromanganese Low-Phosphorus Grade	Manganese.....min. 90% Carbon.....max. 0.07% Phosphorus... max. 0.06%	Additions of manganese to steels of low-carbon specification, particularly stainless steels of 18 per cent chromium, 8 per cent nickel type.
Min. 7.00% Carbon Grade	Chromium.....65 to 68% Silicon.....1 to 3%		Regular Grades	Manganese.....85 to 90% Carbon.....max. 0.07, 0.10, 0.11, 0.15, 0.30, or 0.50%	
Nitrogen-Bearing Low-Carbon Ferrochrome	Chromium.....67 to 71% Silicon.....0.30 to 1.00% Carbon.....max. 0.10% Nitrogen... 0.75 to 2.00%	For additions of nitrogen to improve properties of high-chromium steels.	Regular Grade (High-Silicon)	Manganese.....80 to 85% Carbon.....max. 0.75% Silicon.....5 to 7%	
"SM" Ferrochrome	Chromium.....60 to 65% Silicon.....4 to 6% Carbon.....4 to 6% Manganese... 4 to 6%	A high-solubility chromium alloy for steel or iron in either furnace or ladle.	"Mansiloy" Alloy	Manganese.....60 to 63% Silicon.....28 to 31% Carbon.....max. 0.07% Phosphorus... max. 0.05%	In production of stainless steels, this alloy is used to reduce metal oxides from the slag back into the bath.
Exothermic Ferrochrome	Chromium... 60% approx. Carbon.....4.5% max.	An improved exothermic ladle alloy with high solubility, low carbon pickup, and high ignition temperature.			

*All of the alloys and metals listed are produced in the usual lump, crushed, or ground sizes, except where other special forms are indicated.

PRODUCT *	NOMINAL COMPOSITION	USES
MANGANESE ALLOYS cont.		
Silicomanganese		
Max. 1.50% Carbon Grade	Manganese.....65 to 68% Silicon.....18 to 20%	A versatile alloy useful as furnace block, deoxidizer, and also for making manganese additions to steel in the ladle or in the furnace.
Max. 2.00% Carbon Grade	Manganese.....65 to 68% Silicon.....15 to 17.50%	
Max. 3.00% Carbon Grade	Manganese.....65 to 68% Silicon.....12 to 14.50%	
Medium-Carbon Ferromanganese	Manganese.....80 to 85% Carbon.....1.25 to 1.50%	For making low- and medium-carbon manganese steel and Hadfield steel.
Low-Iron Ferromanganese	Manganese.....85 to 90% Carbon.....approx. 7.00% Silicon.....max. 3% Iron.....max. 2%	For high manganese additions to certain non-ferrous alloys, particularly aluminum.
Manganese Metal	Manganese.....min. 96% Carbon.....max. 0.20% Silicon.....max. 1.00% Iron.....max. 2.50%	Used both as deoxidizer and alloy in production of numerous non-ferrous metals and alloys.
"EM" Silicomanganese Briquets (Square Shape)	Manganese.....2 lb. Silicon.....½ lb. Total Weight.....3½ lb.	For adding manganese (with silicon) to cast iron in the cupola.
"EM" Ferromanganese Briquets (Oblong Shape)	Manganese.....2 lb. Total Weight.....3 lb.	For adding manganese (without silicon) to cast iron in the cupola.

SILICON ALLOYS

30% Ferrosilicon		
Regular Grade	Silicon.....47 to 51%	Deoxidizer for most grades of killed or semi-killed steel. Blocking grade specially sized for maximum efficiency.
Blocking Grade	Silicon.....47 to 51%	
Low-Aluminum Grade	Silicon.....47 to 51% Aluminum.....max. 0.40%	
65% Ferrosilicon		
Regular Grade	Silicon.....65 to 70%	For furnace or ladle addition to carbon and alloy steels.
Low-Aluminum Grade	Silicon.....61.50 to 66.50% Aluminum.....max. 0.50%	Mainly for production of electrical sheet steel.
75% Ferrosilicon		
Regular Grade	Silicon.....73 to 78%	Deoxidizer and alloy for production of high-silicon spring and electrical sheet steel. Graphitizing inoculant for cast iron.
Low-Aluminum Grade	Silicon.....73 to 78% Aluminum.....max. 0.50%	
85% Ferrosilicon		
Regular Grade	Silicon.....83 to 88%	Enables melter to add higher percentages of silicon without chilling metal in ladle. Graphitizing inoculant for cast iron.
Low-Aluminum Grade	Silicon.....83 to 88% Aluminum.....max. 0.50%	
90% Ferrosilicon		
Regular Grade	Silicon.....92 to 95%	Permits large additions of silicon without harmful chilling effect.
Low-Aluminum Grade	Silicon.....92 to 95% Aluminum.....max. 0.50%	
Silicon Metal		
Regular Grade	Silicon.....min. 97 or 96% Iron.....max. 1 or 2%	Additions of silicon to non-ferrous metals, particularly aluminum and copper.
Purified Grade	Silicon.....99.70 to 99.90% Iron......005 to .015%	For applications in non-ferrous industry requiring silicon of high purity.
Low-Calcium Grade	Silicon.....min. 97% Iron.....max. 1% Calcium.....max. 0.10%	For the production of high-silicon aluminum alloys where calcium is detrimental.
Low-Aluminum Grade	Silicon.....min. 98% Iron.....max. 1% Aluminum.....max. 0.10%	For the production of silicon-copper alloys where aluminum is detrimental.
"SMZ" Alloy	Silicon.....60 to 65% Manganese.....5 to 7% Zirconium.....5 to 7%	Particularly strong graphitizing inoculant used in cast iron.
"EM" Silicon Briquets		
Large Size (Cylindrical or Rectangular Shape)	Silicon.....2 lb. Total Weight.....5 lb.	For adding silicon to cast iron in the cupola. (Rectangular briquets are available on pallets.)
Small Size (Cylindrical Shape)	Silicon.....1 lb. Total Weight.....2½ lb.	
Barium-Silicon	Barium.....40 to 50% Silicon.....45 to 55%	For deoxidation of non-ferrous alloys.

*Electromet, "EM," "Mansiloy," "Simplex," "SM," and "SMZ," are trade-marks of Union Carbide and Carbon Corporation.

PRODUCT *	NOMINAL COMPOSITION	USES
SILICON ALLOYS cont.		
Magnesium-Ferrosilicon	Silicon.....43 to 47% Magnesium.....7.5 to 9.5%	For ladle addition to cast iron to obtain special properties.
TITANIUM ALLOYS		
Ferrotitanium	Titanium.....27 to 32% Carbon.....max. 0.10%	For stabilized austenitic stainless steels and high-temperature metals.
Silicon-Titanium	Titanium.....40 to 50% Silicon.....45 to 50% Iron.....max. 3%	For additions of titanium to steels or non-ferrous alloys.
Manganese-Nickel-Titanium	Titanium.....43 to 48% Nickel.....approx. 25% Manganese.....max. 8%	Deoxidization of nickel alloys.
TUNGSTEN ALLOYS		
Ferrotungsten	Conforming to A.S.T.M. Spec. A 144-39	For production of tool and die steels; also high-temperature alloys.
Tungsten Metal Powder		
Melting Grade	Tungsten.....min. 98.80% Total Carbon.....max. 0.25%	Production of tungsten steels and cast tungsten carbide.
Premium Grade	Tungsten.....min. 99.60% Carbon.....max. 0.20%	
Calcium Tungstate	Tungstic Oxide.....68 to 72%	For making tungsten chemicals and other tungsten products.
Calcium Tungstate Nuggets	Tungstic Oxide.....68 to 72%	Making tool steels and high-temperature alloys.
Ammonium Paratungstate	Tungstic Oxide.....min. 88.7%	Intermediate for tungsten products.

VANADIUM ALLOYS

Ferrovandium	Vanadium.....50 to 55% Carbon.....max. 0.20, 0.50, or 3.00% Silicon.....max. 1.50, 2.00, or 8%; and approx. 10%	Production of tool and engineering steels, high-strength structural steels, non-aging rimming steels, and wear-resistant irons.
Vanadium Oxide Fused	V ₂ O ₅86 to 89% Na ₂ O.....approx. 10% CaO.....approx. 2%	For addition of vanadium to steel and for manufacturing catalysts.
Sodium Polyvanadate (Red Cake)	V ₂ O ₅approx. 85% Na ₂ O.....approx. 9%	For manufacture of vanadium compounds, including vanadium catalysts.
High-Purity Ammonium Metavanadate	V ₂ O ₅approx. 99.50% NH ₄ VO ₃min. 99%	

ZIRCONIUM ALLOYS

12 to 15% Zirconium Alloy	Zirconium.....12 to 15% Silicon.....39 to 43% Carbon.....max. 0.20%	This is a powerful deoxidizer. It also increases depth of hardening.
35 to 40% Zirconium Alloy	Zirconium.....35 to 40% Silicon.....47 to 52% Carbon.....max. 0.50%	Deoxidizer for fine grades of alloy steels.
Nickel-Zirconium	Zirconium.....25 to 30% Nickel.....40 to 50%	For deoxidizing and degasifying nickel alloys.
"EM" Zirconium Briquets (Cylindrical Shape, Reddish Color)	Zirconium.....0.55 lb. Silicon.....1.90 lb.	For adding zirconium and silicon to cast iron in the cupola.

IF YOU HAVE A METALS PROBLEM

More than 50 different alloys and metals are produced by ELECTROMET. If you need help in selecting the proper alloys, be sure to consult one of ELECTROMET's specially trained metallurgists and engineers. Address your inquiries to one of the offices listed below.

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Chicago 1, Ill.....230 N. Michigan Avenue
Cleveland 14, Ohio.....Union Commerce Building
Detroit 2, Mich.....6-240 General Motors Building
Houston 11, Texas.....6119 Harrisburg Boulevard
Los Angeles 58, Calif.....2770 Leonis Boulevard
New York 17, N. Y.....30 East 42nd Street
Pittsburgh 22, Pa.....2207 Oliver Building
San Francisco 6, Calif.....22 Battery Street
In Canada: Electro Metallurgical Company of Canada Limited, Welland, Ontario

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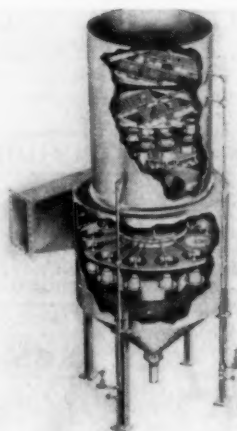
(Continued from page 434)

technical bulletins, revised specifications, and important fundamental and factual information about the performances of different weaves of glass cloth, weights of fibers, and treatment of the cloth preliminary to lamination.

Fiber glass-plastic laminates are being used not only for radomes and other aircraft parts but for body armor, automobile bodies, bathtubs, boats, furniture, fishing rods, toys, and scores of experimental uses.

1 1 1

Multiple-Action Scrubber Eliminates Stack Dust



The nuisance of stack dust is eliminated by a new system of multiple-action scrubber controls. The system combines six different principles of dust precipitation and is capable of removing extremely large volume of dust from the stack gas. Its operating efficiency, even at the extremely high dust loadings found in asphalt plants, assures freedom from air pollution. The unit is specially adapted to the control of dust from rotary dryers, cyclones, kilns, roasters, mixers and pulverizer exhausts as well as from the stacks of chemical plants and similar industrial operations. The maker is Johnson-March Corp., Philadelphia.

1 1 1

"Bouncing Putty" Helps Improve Welds In Steel

Silicone "bouncing putty", one of the most intriguing chemical curiosities, ever to tickle public fancy, has now gone to work for industry. The General Electric Company, whose chemical division is a major silicone producer, has found it helps to improve welds in steel plates and pipe.

The famous G-E silicone material
(Please turn to page 440)

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with corrosion resistant
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Makers of Hand and Power Hack Saw Blades,
Frames and Metal Cutting Band Saw Blades

1824

(Continued from page 438)

which can be pulled like taffy, broken with a quick snap, or bounced like a ball, is being thinned to a fluid paste and marketed as a weld-backing compound by the company's welding department at Fitchburg, Mass. Painted on joints before welding, the product is said to promote uniform weld penetration and to eliminate the harmful effects of air on the underside of welds. It is suggested for use in all arc welding processes except automatic inert-arc welding where argon is used as the shielding gas.

General Electric says the new compound overcomes many of the disadvantages of fluxes, metal and gas backing media. It is easily applied to complex parts and the powder residue left after welding can be quickly removed with a cloth. Because it promotes no carbon pick-up in the weld, it is very useful in the welding of low-carbon stainless steels. The compound gives off no noxious fumes, and is non-explosive.

One 16-ounce can of the paste covers 1300 lineal feet of joint when applied in a strip one-half inch wide.

1 1 1

**Occupational Safety
Posters Now Available**

Funny scenes and comic mice, or serious thoughts and sound advice—you can take your choice from the National Safety Council's new 1953 Directory of Occupational Safety Posters containing 756 miniature illustrations of colorful visual salesmen of safety.

Both the serious and humorous approaches are used to provide change of pace and to enable the industrial safety director to select the soundest psychological approach to his problems.

There are many posters for specific industries, such as chemical, mining, petroleum, textile, etc. There also is a wide selection of general themes applicable to virtually all industrial fields.

The 72-page directory contains advice to safety men on how to choose and use posters effectively, and a detailed index makes it easy to locate all posters on a particular subject.

For a free sample copy of the directory and a price schedule of posters, write the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

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Columbus 8, Ohio
Pittsburgh 33, Pa.
Toledo 2, Ohio

MIDDLE WEST, CENTRAL & NORTH

Steel Sales Corporation
Chicago 23, Ill.
Detroit 10, Mich.
Grand Rapids 2, Mich.
Indianapolis 2, Ind.
Kansas City 8, Mo.
Milwaukee 9, Wis.
Minneapolis 13, Minn.
St. Louis 10, Mo.

SOUTHEAST

J. M. Tull Metal & Supply Co.
Atlanta 3, Georgia

SOUTH, SOUTHWEST & MOUNTAIN

Metal Goods Corporation
Dallas 9, Tex.
Denver 2, Colo.
Houston 3, Tex.
New Orleans 12, La.
Tulsa 3, Okla.

PACIFIC COAST & FAR WEST

Pacific Metals Company, Ltd.
Los Angeles 21, Cal.
Salt Lake City 4, Utah
San Diego 1, Cal.
San Francisco 10, Cal.

NORTHWEST

Eagle Metals Company
Portland 12, Ore.
Seattle 4, Wash.
Spokane 8, Wash.

CANADA

Wilkinson Company, Ltd.
Edmonton, Alberta
Vancouver, B. C.

Robert W. Bartram, Ltd.
Montreal 1, Que.

Alloy Metal Sales, Ltd.
Toronto 5, Ont.

MEXICO

La Paloma Co. De Metales, S. A.
Mexico, Mexico, D. F.

YOU'LL WANT TO READ THIS...

"Nickelsworth" is a quarterly publication devoted to interesting and unusual applications of nickel alloys in industry. We think you'll find it worthwhile because each issue contains news, features and special articles that tell how others have solved problems of metal selection. To start your complimentary subscription to "Nickelsworth," just send your name and address to INCO. No cost. No obligation.



Beside yourself?

This man has a problem. As you can see, he's beside himself trying to figure out the answer.

You might be, too, if you were in his shoes. He's looking for an available metal or alloy that's corrosion-resisting. And strong ... tough ... hard ... machinable ... and one or two other things.

So far, no luck.

Why doesn't he call his Inco Distributor salesman? He might come up with the answer right off, for he's a specialist on corrosion-resisting metals. His warehouses hold a wide variety, including nickel alloys, stainless steels, copper, aluminum and brass. At least one of them probably has the properties and characteristics our friend needs.

If not, his Inco Distributor salesman knows where to get dependable technical information on corrosion problems.

One of his sources, for example, is Inco's Corrosion Engineering Section. Here reports of corrosion tests on more than 40,000 specimens of commercial metals and alloys are carefully catalogued. If the answer to your problem has already been worked out, there's no reason for you to look further. If it hasn't, our Corrosion Engineers will try to find it for you.

There's no charge for these services, of course. Nor for the many other extra services always available to you through your Inco Distributor Salesman. Don't forget him. He's the man to go into a huddle with—whenever metal-selection problems arise. And he's got the latest information on the availability of strategic metals right at his finger tips. The International Nickel Company, Inc., 67 Wall Street, New York 5, N. Y.

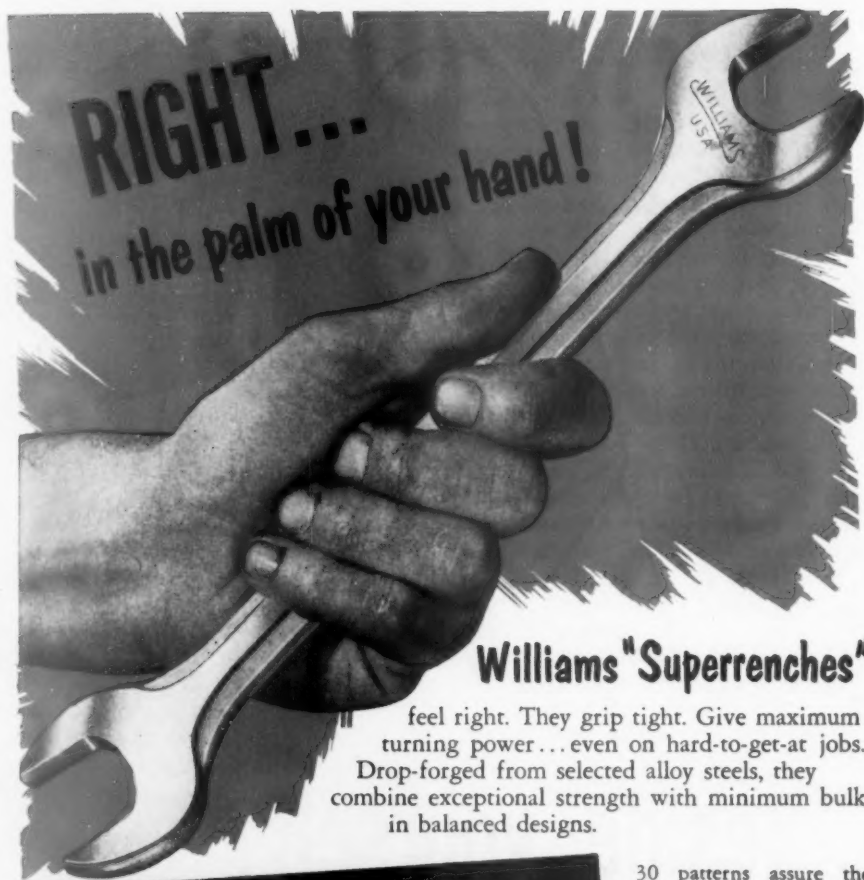
Inco Nickel Alloys



MONEL® • "R"® MONEL • "K"® MONEL • "KR"® MONEL

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Williams "Superwrenches"

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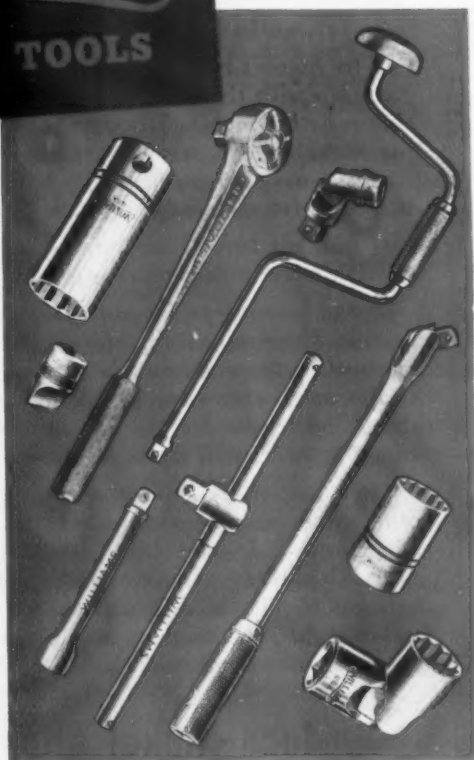
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Made from selected alloy steel, heat-treated and chrome plated, "Supersockets"[®] come in 5 patterns. Midger 1/4", Bantam 3/8", Standard 1/2", Heavy Duty 3/4" and Extra Heavy Duty 1" square drive. Variety of sets... a real value. Complete assortment of drivers and handles... ratchets, speeders, flex handles... adapters, attachments and extensions in each pattern.



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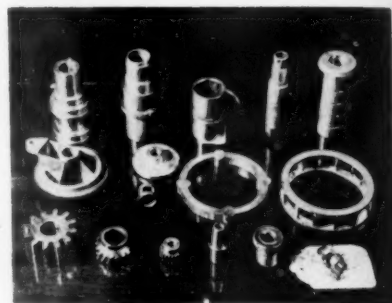
521 Vulcan Street

Buffalo 7, N. Y.

Asarco Continuous-Cast Process Shown In Sound-Slide Film

A new, full-color, 35 mm. sound-slide film, describing the patented Asarco process for continuous casting of bronze rod, tubes and shapes, has been completed by the Continuous-Cast Products Department, American Smelting and Refining Company, Barber, N. J. It is available to interested groups without obligation.

The film points out that the Asarco process is the only continuous-cast process in commercial use producing copper-base alloy stock ready for machining or other fabricating operations.



Parts and sub-assemblies machined from Asarco continuous cast bronzes.

The process makes available a wide range of alloys in a form equivalent, in all essential respects, to long mill rods, tubes and shapes. The first commercial installation was installed at the company's Perth Amboy, N. J., plant for continuously casting copper billets in 1937. Over 400 million pounds of this material have subsequently been produced.

In September, 1947, the company constructed and brought into operation a new improved plant for the continuous casting of copper alloy rods, tubes and shapes, and can now produce a wide variety of shapes and sizes from 7/16" to 5 1/8" diameter and in lengths up to 20 feet.

Molten metal, supplied by an auxiliary melting furnace, is maintained at a proper temperature in the casting crucible. Solidification of the rod or tube takes place in a self-lubricating, water-cooled graphite die. Driving wheels, mounted directly beneath, withdraw the solidified product continuously at a controlled speed. A traveling saw, mounted below the driving rolls, is engaged at proper intervals to cut uniform lengths.

The casting crucible is totally enclosed within the furnace and is maintained under a nitrogen atmosphere.

(Please turn to page 446)

for you...the nation's fabricators



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Available in solid, rod, bar, semi-hollow and hollow shapes in all standard alloys. Also available in tubing. In addition, Kaiser Aluminum provides the

services of its engineers to work closely with you to select proper alloys or to help improve production methods.

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For complete information, call or write any Kaiser Aluminum sales office. Located in principal cities. See

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our catalog in Sweet's Product Design File or write for copy. Kaiser Aluminum & Chemical Sales, Inc., Oakland 12, California.

Other Kaiser Aluminum products include: Industrial Foil and electrical conductor. Kaiser Aluminum also supplies household, freezer and broiler foil for home uses, Shade Screening for the building industry and corrugated Roofing Sheet for farm and industrial buildings.

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- Electronic components including miniature tube sockets, crystal sockets, connectors, stand-off insulators, feed-through insulators and terminals, trimmers, etc.
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*du Pont trademark

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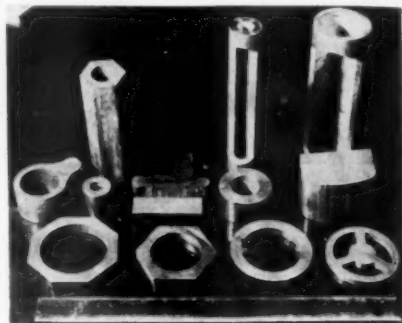
CAMDEN 1, NEW JERSEY

Representatives in Principal
Cities Throughout the World



(Continued from page 442)

phere. The process, which operates as a true gravity-fed bottom-flow casting method precludes the possibility of trapping incidental dirt and dross. Such foreign matter as may enter the system floats on top of the melt without turbulence to carry it



Examples of the bars, tubing and shapes made at Asarco's continuous casting plant.

into the product. Freezing from the bottom upwards is ideal for permitting the escape of any dissolved gases which are liberated during solidification. The molten bath, functioning as a huge riser and head, prevents the formation of shrinkage cavities.

1 1 1

National Cash Register Has New Automatic Adding Machine

Figures add and print automatically as they are entered on the keyboard on the new National "Live" keyboard adding machine, released for sale by the National Cash Register Company, Dayton, Ohio. Until now, all electric adding machines operated in two steps: (1) set up the amount and (2) depress the motor bar. The National "Live" keyboard eliminates that second step, eliminating up to 50% of all hand motion.

1 1 1

Vornado Turn-About Window Fan Rotates 180 Degrees

Flexible performance is the keynote of the Vornado Turn-About Window Fan, manufactured by the O. A. Sutton Corporation, Wichita, Kan. Its reversible circulator will rotate 180 deg. and will direct air where it is wanted. It changes instantly from intake to exhaust, pulling cool air in or pushing hot air out at the touch of a finger. It is easily installed and will not mar the window sill or casing. Windows can be closed during inclement weather without moving the fan. The fan has multiple speeds which give a variety of cooling effects.



A top P.A.'s keys to value

INSTEAD of buying component parts by a price tag alone, a top P.A. gets at true value with the four keys shown above.

One key (marked by a salesman's briefcase) represents the quality of component parts that helps make his company's product easier to sell.

The second key (T-square and triangle) stands for the engineering service that goes with the component parts he buys.

The third key (advertisements) symbolizes the public acceptance of well-advised component parts he buys.

Price is represented by the fourth key (dollar sign). A top P.A. knows the importance of price. Yet, he knows that price alone is outweighed by quality, service, and public acceptance. This formula explains it.

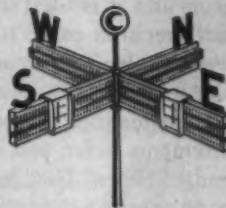
$$\text{Value} = \frac{\text{quality} + \text{service} + \text{public acceptance}}{\text{price}}$$

No matter how you figure it, Timken® bearings offer the best value in tapered roller bearings because they're the highest quality, are backed with the best engineering service and enjoy the widest public acceptance. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

TIMKEN
TRADE-MARK REG. U. S. PAT. OFF.
TAPERED ROLLER BEARINGS



P.A. Notes:

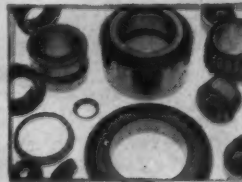


ENGINEERS EVERYWHERE. More than 100 engineers, each backed by more than 50 years of bearing experience, work out of the Timken Company's 26 district offices to give you help when you call for it.

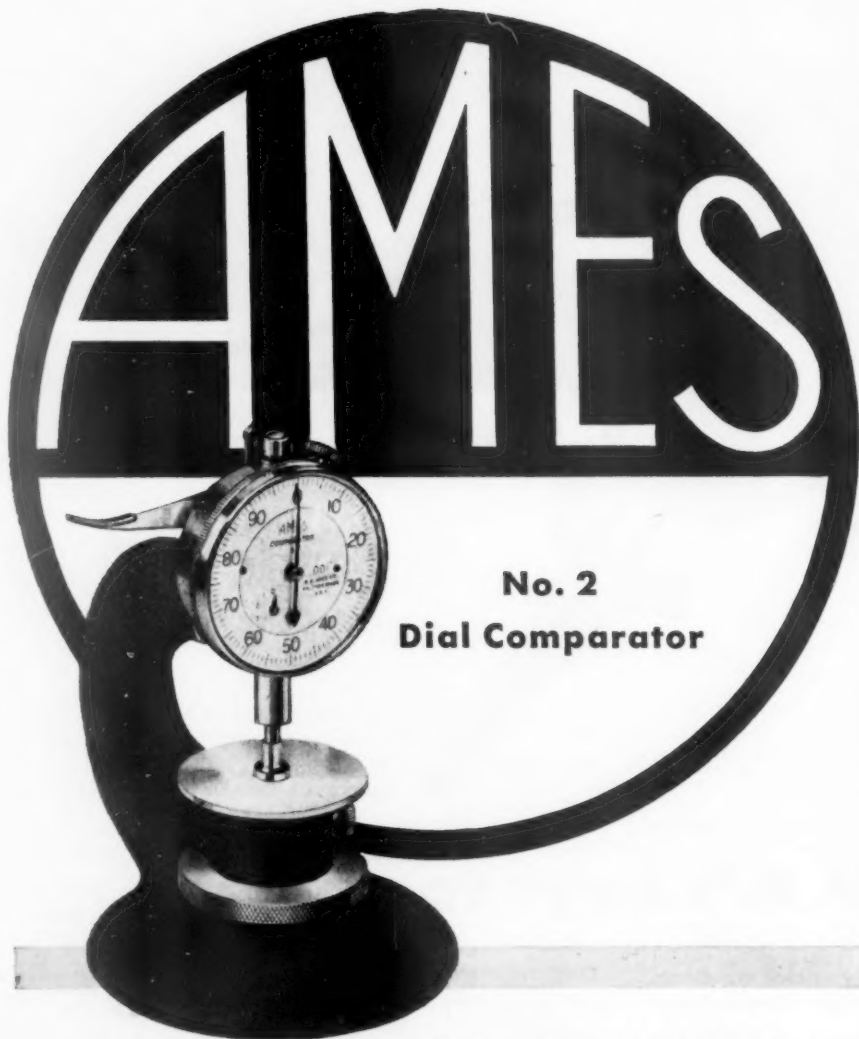
SALES CLINCHER. Your salesman will write more orders when customers know your product carries the "Timken Bearing Equipped" label.



26 DIFFERENT TYPES. No matter how many types and sizes of tapered roller bearings you need, you can get them all from one dependable source—the Timken Company. The Timken Engineering Journal lists 5850 sizes, 26 different types.



NOT JUST A BALL NOT JUST A ROLLER THE TIMKEN TAPERED ROLLER BEARING TAKES RADIAL AND THRUST LOADS OR ANY COMBINATION



**No. 2
Dial Comparator**

This is smallest in the Ames' line of high quality dial comparators and it is ideal for desk or bench use in the fine inspection of small precision parts. It is light in weight, but its broad base makes it very stable. The capacity approximates that of the regularly supplied Ames No. 202 Dial Indicator which has a dial numbered 0-100, graduated in .001" and with a .250" range.

Should your job requirements differ, you can have the No. 2 with any Ames "Hundred Series" Dial Indicator. Send for Ames Catalog No. 58 covering the entire line of Ames

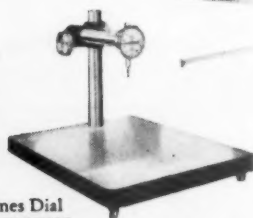
Top Quality measuring instruments or, better still, send complete details of your Quality Control problem. Ames will suggest a solution — no obligation, of course.



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Ames Dial Micrometer No. 516



Ames Dial Comparator No. 130



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New "Tires" Operate Easily Over Obstructions

Preliminary trial runs of a new type of extremely low-pressure "tire," revolutionary in principle, shape, construction and use, have just been completed successfully, according to William H. Albee, inventor-designer, and the Goodyear Tire & Rubber Company.

The new type "tires," designated as "Rolligons" by the inventor, impart to the vehicle on which they are mounted the ability to operate easily and without springs over sand and on soft ground and over obstructions and rugged terrain. Their design is expected to find wide application in military service, industry and agriculture.



Soft ground—or other object—is no problem.

The Rolligon is soft and fat like a watermelon-shaped balloon. It supports the load of the vehicle and allows it to roll along over the surface of the ground. Goodyear molds the Rolligons, using only one ply of rubberized fabric, topped by a quarter-inch layer of gum rubber tread stock.

The Rolligons are operated with air pressures of only 1½ to five pounds per square inch, compared with normal pressures ranging above 20 lbs. in conventional tires.

1 1 1

Goodyear Gets Patents on New Type Synthetic Rubber

An entirely new type of synthetic rubber which may give the tire of the future vast improvement in wearing qualities is being developed by The Goodyear Tire & Rubber Company, Akron, Ohio. Laboratory testing of the new material indicates that tires made from it could easily outwear the automobile itself and that shoe soles and heels and heavy duty conveyor belts can be given extraordinary wear resistance.

The promise of the new synthetic, (Please turn to page 450)

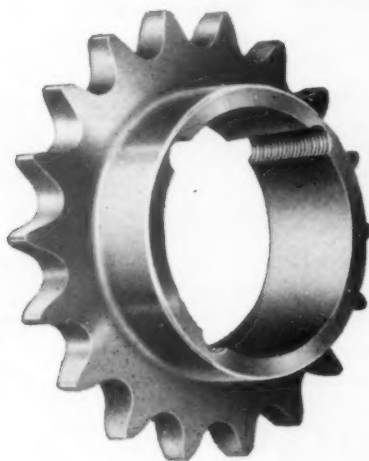
SPROCKET NEWS FROM MORSE



M=PT

NOW, GET EVEN FASTER DELIVERY OF MORSE STOCK SPROCKETS; SAVE MONEY, TOO

Morse Stock Roller Chain Sprockets with Taper-Lock Bushings now available from Morse Distributors. This newest addition to the Morse line makes possible immediate delivery of ready-to-use sprockets.



Now, practically every sprocket requirement you may have, can be filled from your local Morse Distributor's shelves.

In addition to the wide variety of Morse Steel and Cast-Iron Stock Sprockets always available, your Morse Distributor now offers Type B Stock Sprockets from $\frac{1}{2}$ " pitch through $1\frac{1}{4}$ " pitch, 10 to 112 teeth, with Taper-Lock Bushings. The Taper-Lock Bushings are available with bore diameters from $\frac{1}{2}$ " to 3" in increments of $\frac{1}{16}$ ".

With Morse Taper-Lock Sprockets you will realize these advantages:

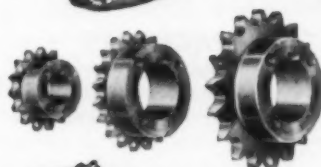
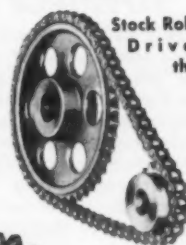
(1) Prompt delivery—no more delay for reborring, keyseating or other alterations. (2) Flush bushings permit close mounting—Morse Taper-Lock Sprockets need no more shaft space than any Type B sprockets. (3) Compliance with safety requirements—there are no flanges, collars or protruding screw heads to create dangerous operating conditions. (4) Low cost.

COMPLETE MORSE STOCK SPROCKET LINE

Stock Silent Chain
Drives $\frac{1}{2}$ " and $\frac{3}{4}$ "
pitches.



Stock Roller Chain
Drives, $\frac{3}{8}$ "
through 2"
pitch.



Plain-bore Stock Roller
Chain Sprockets Types A,
B and C.

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CHAIN



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*Long Service Life, Engineering Service, and Quality—which you get in unusual degree when you buy Morse Power Transmission Products.

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M=PT; Morse means Power Transmission

MAY, 1953

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449



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Blanking, forming, drawing and heat treating. Coining, sizing, and close tolerance production.

The BOSSERT Company

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UTICA 1, NEW YORK

(Continued from page 448)

according to P. W. Litchfield, chairman of the board for Goodyear, lies in its greatly increased toughness and resistance to abrasion. The problems to be overcome before the new product can find wide use are in the areas of economic production of the raw material, the development of processing methods, and in the improvement of its present qualities of resilience and adhesion.

The scientific work leading up to the issuance of patents on the new synthetic rubber was conducted under the direction of Dr. R. P. Dinsmore, Goodyear vice president in charge of research and development.

Dr. Dinsmore explained that the new type rubber is chemically similar to Germany's recently announced Vulcollan, but that it offers important processing advantages over the German product.

Tests of the Goodyear material show tire treads of this material achieve from two to five times greater wear resistance than treads of the best "cold" rubber produced. It is equivalent to butyl rubber in air diffusion resistance, and is also equivalent to neoprene in oil resistance. Its resistance to oxidation is far superior to natural or to any other man-made rubbers.

Tensile strength is described as 50 to 100% better than any other types of rubber-like material. Vulcanization time on tires made of this material can be slashed more than in half. In addition, it can be produced in every color of the rainbow without losing any of its utility.

The basic ingredients are ethylene glycol and propylene glycol, mixed with adipic acid to form the polyester base of the new rubber. The polyester is treated with an amount of di-isocyanate, as determined by Goodyear's "reaction factor." This "R" factor, wherein lies Goodyear's secret of development, stops the solidifying reaction of the two chemicals at a point where the resultant material can be further processed on mills, calenders, extruders and other conventional rubber equipment.

Gasoline Consumption Hitting All-Time High

The civilian population of the United States is consuming more gasoline than at any time in its history according to the American Petroleum Institute. Coinciding with the record number of motor vehicles

(Please turn to page 452)

SEYMOUR SERVICE AT ALL POINTS

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SO—when you need hose, boots, or clothing—be sure to get acquainted with the Continental Warehouse nearest your plant. You'll like the service you get.



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ADDRESS _____
CITY and STATE _____

(Continued from page 450)
on the nation's highways—approximately 53 million in 1952, over two per cent higher than the previous year—the automotive gasoline consumption in 1952 was more than 40 billion gallons, over seven per cent more than in 1951. It took almost 200,000 service stations to supply the American drivers, and these operators shared an income of nearly 10 billion dollars from the public.

New Type Glass Unit For Buildings Announced

Development of a new glass unit for skylighting industrial, commercial and other types of buildings has been announced by the Kimble Glass Company, a subsidiary of Owens-Illinois Glass Company.



A technician measures the amount of daylight transmitted by a Toplite section in the mock-up classroom on the roof of the University of Michigan's Engineering Research Institute.

The new glass unit consists of two pieces of pressed glass hermetically sealed together with a sheet of Fiberglas between. Known as the "Kimble Toplite System", the glass units are laid in factory fabricated aluminum grids and are ready for installation.

Among the chief advantages claimed for the new skylighting system are: completely pre-fabricated in the factory means low installation cost on the job; durable weather-proof construction; no porous materials exposed to the weather; low solar heat transmission in summer months; elimination of glare; extremely uniform light transmission throughout the year; evenly diffused light throughout the interior; good insulation during cold weather;

The glass units which were developed in the Daylight Laboratory

(Please turn to page 454)

on your nut setting operations...

Why
use two?

when
one will do!

One-piece, precision-built Apex SN Nut Setters offer several advantages not found in two-piece socket-extension combinations. Power is applied direct from gun to work . . . full torque is developed . . . operation is faster, safer—and easier on tools and on tool operators. There are no movable parts, joints or locking devices to cause vibration, backlash and excessive loss of torque.

Apex SN Nut Setters are available with the following hex shank drives— $\frac{1}{4}$ " (standard and

bolt-clearance type); $\frac{7}{16}$ ", $\frac{5}{8}$ " and $\frac{3}{4}$ " (standard type). Broached openings, Hexagon: $\frac{3}{16}$ " to $1\frac{1}{2}$ "; Square: $\frac{1}{4}$ " to $\frac{7}{8}$ ". If your power tools take a hex shank, you can use Apex SN Nut Setters on your work, and save time, money and manpower—now!

CATALOG 29 contains complete information, specifications and illustrations of over 5,000 Apex impact sockets, extensions, adapters, universal joints and other production tools. Write, on your company letterhead please, for your copy.

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Made Better with Better Equipment

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Make it Better with Better Equipment

**Make this Your Cast
Iron Parts Department**

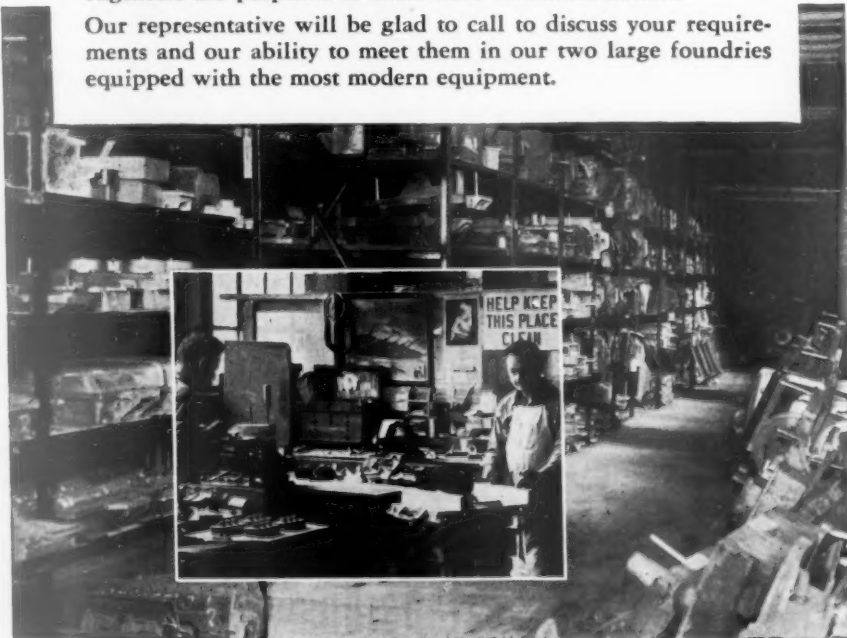
CALL
TOWER 1-5040
(Cleveland)



● No matter what your requirements for gray iron castings may be — from half a pound to half a ton — when you make Forest City Foundries Company your cast-iron parts department you can depend upon receiving your castings as specified, delivered when wanted. All you need do is, call our office as you would your own production department.

Here patterns are carefully numbered, indexed and stored in our new fireproof storage department for instant availability. When inspection reveals the advantage of making changes that will improve the quality of the finished product, our skilled pattern engineers are prepared to make such recommendations.

Our representative will be glad to call to discuss your requirements and our ability to meet them in our two large foundries equipped with the most modern equipment.



Each pattern is carefully stored for instant availability. (Inset photo) — A corner of one of Forest City's pattern shops.

The FOREST CITY FOUNDRIES Company

2500 WEST 27TH STREET • CLEVELAND 13, OHIO
TELEPHONE TOWER 1-5040

(Continued from page 452)

at the University of Michigan have unusual light transmitting characteristics. Prisms on the inside of the top piece of glass are designed so that the amount of daylight and solar heat transmitted into the interior vary, depending upon the location of the sun. The second piece of glass is designed to distribute the light to the area below. The sheet of Fiberglas, .002 inches thick, softens the light transmitted through the unit and augments the insulating effect of the vacuum between the two pieces of glass.

During the summer months when the sun is at its highest altitude, the prisms in the glass unit reflect skyward as much as 53% of the undesirable direct sunlight. In winter months, when the sun is at its lowest position, the unit transmits more light and solar heat. Because of its design, the unit accepts and transmits a high volume of light from the northern half of the sky in all seasons of the year. This means more uniform light transmission throughout the year, low solar heat transmission in the hot summer months and elimination of glare.

1 1 1

Sees Greater Dependence On Automatic Controls

Industry, as the years pass, will be forced to rely more on automatic controls to speed up productivity, according to Henry F. Dever, president of Brown Instruments Division.

At present, American industry is investing some 7% to 8% of its capital expenditures on recorders and controllers.

According to Mr. Dever expenditures on instrumentation will rise to, possibly as much as 15% of the capital outlays for machinery and equipment. Also in future the maximum amount of automatic controls will be built into each new factory "from the beginning." For it is recognized that this advance planning, or "systems engineering" justifies its cost. In almost any mass production, even minor improvements in efficiency are measurable in anywhere from thousands to millions of dollars annually.

Mr. Dever stated that it was imperative that American industry develop the full potential of automatic control—currently we are only some 10% to 20% along the way. He warned that America's civilian forces will not be able to cope with

(Please turn to page 456)

the
ring's the
thing that
**KEEPS
DIRT OUT**

Here's why **SKF** Triple-Seal "SAF" Pillow Blocks are your solution:

- **SKF** Triple-Seal "SAF" Pillow Blocks are easy to install and inspect.
- The Triple-Seal rotating rings provide effective sealing from dirt; retains any kind of lubricant.
- The bearings are self-aligning.
- Available with ball bearings or spherical roller bearings, free or held . . . for either adapter mounting or direct mounting of bearing on shaft.

When you have a bearing replacement to make, call your **SKF** Distributor. He'll show you *why* you will minimize bearing trouble with **SKF** Triple-Seal "SAF" Pillow Blocks. Remember—your **SKF** Distributor is a bearing *specialist*.

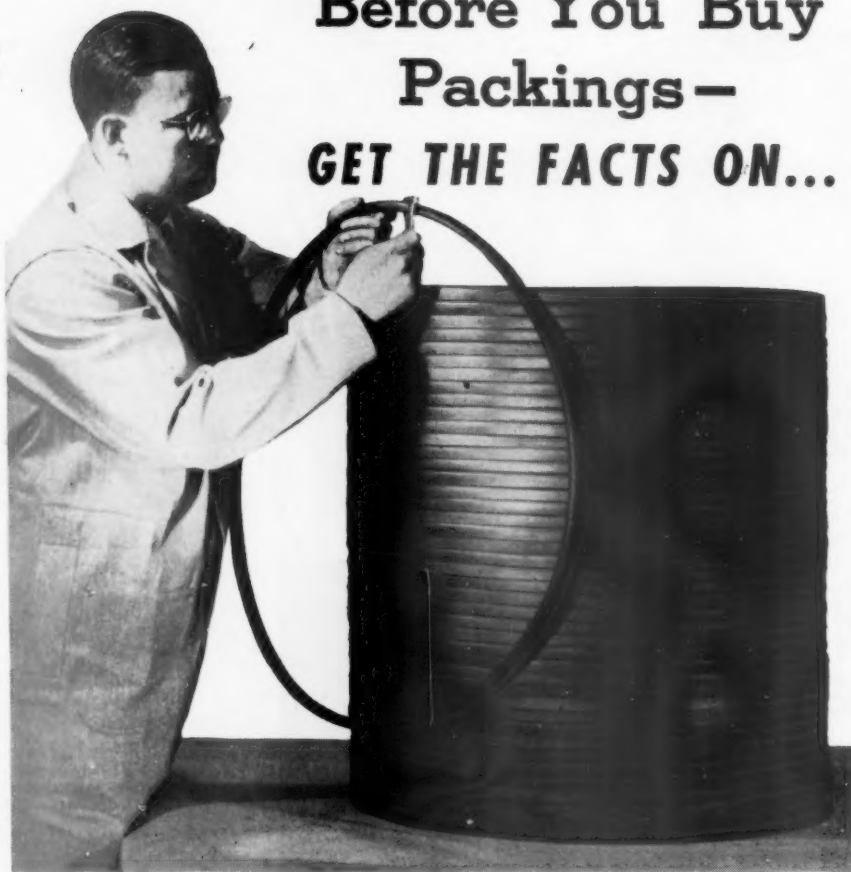
SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.,—
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BALL AND ROLLER BEARINGS

SKF'S COMPLETE LINE OF ANTI-FRICTION BEARINGS, PLUS **SKF** ENGINEERING CO-OPERATION, HELPS YOU PUT THE RIGHT BEARING IN THE RIGHT PLACE.

Before You Buy Packings— GET THE FACTS ON...



Tannate® LEATHER PACKINGS...

By custom-manufacturing Tannate Packings to your specifications, Rhoads can exactly fit your individual requirements. In this way, Rhoads assures more profitable operation through long, uninterrupted production with more pieces turned out per hour.

Unlike other types, Tannate Packings do not require lubrication; will not score or abrade. In addition, your needs can be anticipated, for Tannate Packings may be stored indefinitely. Send us your packing requirements for quotation: Include type, service, pressure, temperature, dimensions and quantity.

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U PACKING



VEE PACKING



FLANGE PACKING



CUP PACKING

Send for the
Rhoads Packing
Data File
No Obligation



(Continued from page 454)
tomorrow's needs unless it has widespread use of mechanical aids. "From 1940 to 1950," he explained, "population climbed some 20 million. . . By the time these youngsters grow up our present labor force . . . will be hard pressed to meet the new demands for cars, homes, clothing, food, or any of the things people want. Automatic controls and industrial instruments can be utilized to ease this productive burden."

Reconditioning Service Recovers Plastic Gloves

U. S. Industrial Glove Corporation, 9350 Roselawn, Detroit 4, Michigan, announces a new service to industry, the reconditioning and reprocessing of worn and damaged, smooth and rough plastic dipped cotton gloves. The new service designated as "Over-Kote", is available in practically all industrial areas through the corporation's Glovco National Service.



U. S. says investigation and tests have proven that up to 90% of previously discarded gloves can be reclaimed. The practicability of plastic dipped gloves has been proven in a wide variety of industries for the greater resistance to wear and better grip they afford. However, the expense has been recognized. The new Glovco service, which includes cleaning, sterilizing, patching and repairing, reshaping, recoating, vulcanizing and pairing and which assures in most cases 100% reusability is said to be accomplished at a small fraction of the cost of new gloves, should make the use of plastic gloves completely practical.

ACEC

MOTORS

**backed by nation-wide and
world-wide service**

One of the **WORLD'S LARGEST ELECTRICAL MANUFACTURERS** with four up-to-the-minute plants covering 248 acres, and the accumulated engineering and manufacturing experience of more than 70 years . . . that's ACEC of Belgium.

The ACEC Motors already in use have earned a world-wide reputation for mechanical and electrical excellence. They are sold and serviced in 50 countries throughout the world—a fact which makes ACEC Motors particularly valuable on your equipment for export.

Priced below most other motors, **THREE-PHASE ACEC** motors—from $\frac{1}{4}$ to 200 hp—are immediately available from warehouse stocks in the United States.

Manufactured strictly to **NEMA FRAMES AND SPECIFICATIONS**, ACEC motors come in a wide variety of types to meet your motor needs.

And 300 ACEC **DISTRIBUTORS** and **SERVICE SHOPS** across the nation assure prompt and efficient fulfillment of your service requirements.

To get top-level motor performance at lower prices *plus* the advantages of nation-wide and world-wide service facilities, contact our main office and we will have our nearest representative call you.

NOW ON HAND

**Three-Phase Fractional
and Integral HP Motors—
 $\frac{1}{4}$ to 200 hp
FULLY GUARANTEED**

Available in the following types:

- ★ Open Drip Proof (Fhp. and Integral)
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- ★ Pump Motors
 - Style "C" Face Mounted
 - Style "P" Vertical Solid Shaft
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- ★ Industrial Sewing Machine Clutch Motors
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WALLINGFORD STEEL

Tubing

ORNAMENTAL
MECHANICAL
or PRESSURE

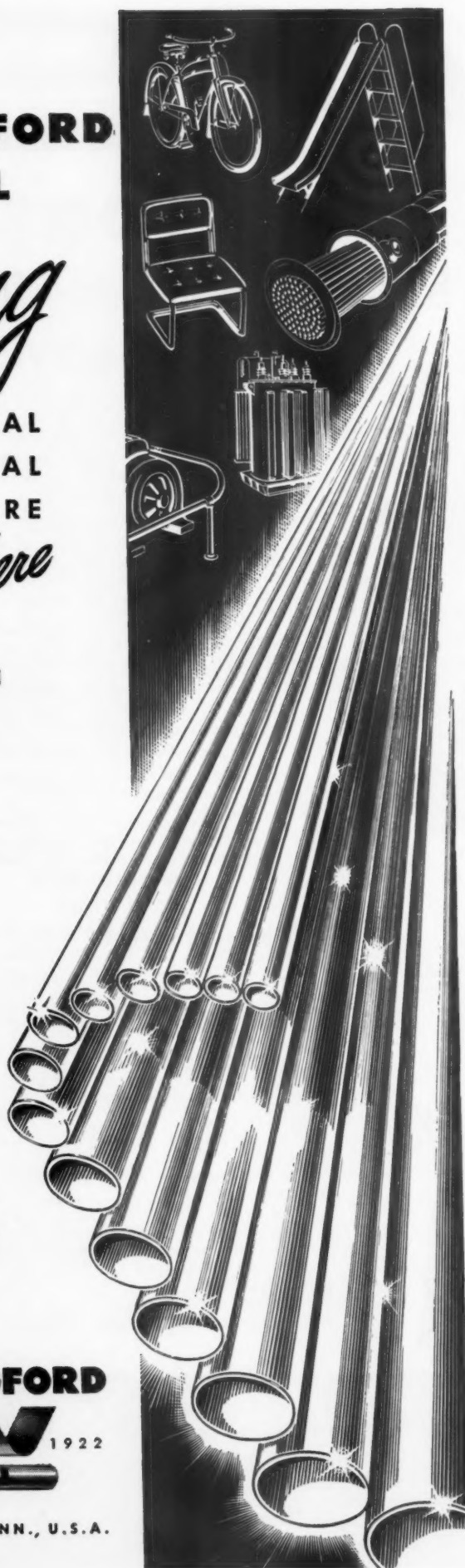
Everywhere

that TUBING is used
and UNIFORM
WALL THICKNESS
is a
requirement,
WALLINGFORD
WELDED
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ALLOY or
STAINLESS
TUBING
MEETS
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AND IT'S

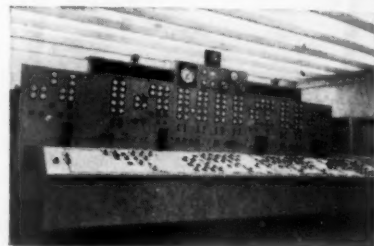
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Available*

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Wakefield Luminous-Acoustical Ceiling Excellent Air Diffuser

Tests conducted at the Case Institute of Technology on the Wakefield Luminous-Acoustical Ceiling have proved it to be an excellent air diffuser by providing draftless conditioned air wherever this type of ceiling is installed. Wherever the corrugated Plexiglas diffuser rests on an acoustical baffle or ceiling wall angle, approximately one inch



of open area is provided for air to filter through at low pressure and without causing annoying currents of air to filter through at low pressure and without causing annoying currents of air to occupants of the room. Thus, in most installations duct work and opaque metal diffusers are eliminated and up to 40 cents per square foot is saved.

The Wakefield Ceiling provides high level illumination from 55 to 110 footcandles with standard lamp spacing of 36" or 18". The noise reduction co-efficient of the acoustical baffle and the ceiling is .40.

Copies of the air diffusion tests conducted at the Case Institute of Technology are available on application to the F. W. Wakefield Brass Company, Vermilion, Ohio.

1 1 1

Report Issued On Industrial Application of Atomic Energy

"The fields for early application of atomic energy are still somewhat removed from metal working industry, except for occasional application of radioactive tracers," says a report issued by the Council for Technological Advancement. The report suggests that progress might be more rapid except for certain major non-technical barriers to private investment in the production of nuclear power that lie in the Atomic Energy Act. These are briefly Section 4 which makes it unlawful for any private person or corporation to own facilities for the production of fissionable material and Section 11 which excludes from the normal patent system certain areas of atomic energy.

(Please turn to page 460)

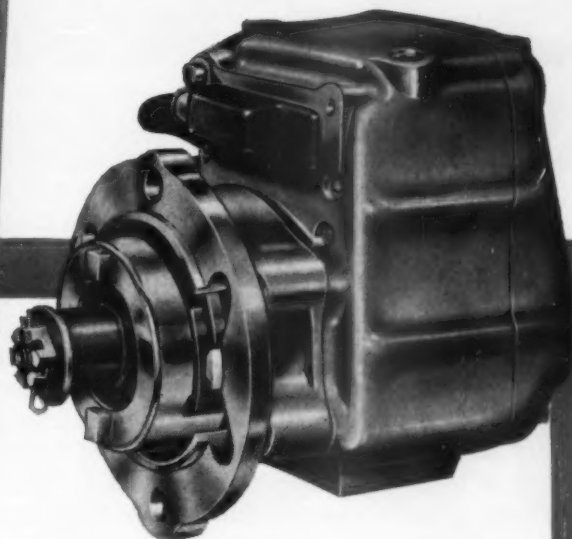
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PERFORMANCE
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- ✓ Simplicity in design.
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- ✓ Constant spark over entire speed range.
- ✓ Compact and sturdy construction.



Magneto efficiency plays a mighty important part in small engine performance. So it is just good business to see that the engines you purchase are equipped with Bendix magnetos—the recognized leader for dependable starting, economy of operation, long life and freedom from breakdowns. These rugged lightweight magnetos are your best choice for their basic design assures quality performance for every type of small engine and every pricing requirement. Be sure to specify Bendix—the most trusted name in magnetos. Complete information available on request.

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Brewer Building, 176 W. Wisconsin Avenue, Milwaukee Wisconsin • 582 Market Street, San Francisco 4, California

Kills Fire, Sounds Alarm and Shuts Down Machinery

Free Catalog and Engineering Service Available without Cost

Randolph SIMPLIFIED FIRE EQUIPMENT

The illustration shows a variety of fire-fighting equipment. On the left, there are three small, dark, cylindrical extinguishers. Next to them is a larger, dark, wheeled unit with a pump handle. In the center is a bicycle with a large, dark, cylindrical extinguisher mounted on its frame. To the right of the bicycle are four more small, dark, cylindrical extinguishers of different shapes and sizes. On the far right, there is a small, dark, cylindrical extinguisher with a spray nozzle, and a small, dark, cylindrical extinguisher with a spray nozzle, both emitting a cloud of white smoke or foam.

(Please turn to page 462)

*Latitude? Longitude?
Azimuth? Angle?*

**...They Count on this Counter
to tell exactly**



Everyone Can Count on VEEDER-ROOT

Aerial navigators and bombardiers rely on the figures that keep turning up on this Veeder-Root Counter, specially designed for the Armed Forces. And if *you* need to know exactly where you are, with any product or mechanism that's vital to Defense, then you can

count on Veeder-Root to help you, to the utmost limits of ability . . . and of available capacity. Write:

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"The Name That Counts"
HARTFORD 2, CONN.

Chicago 6, Ill. • New York 19 • Greenville, S. C.
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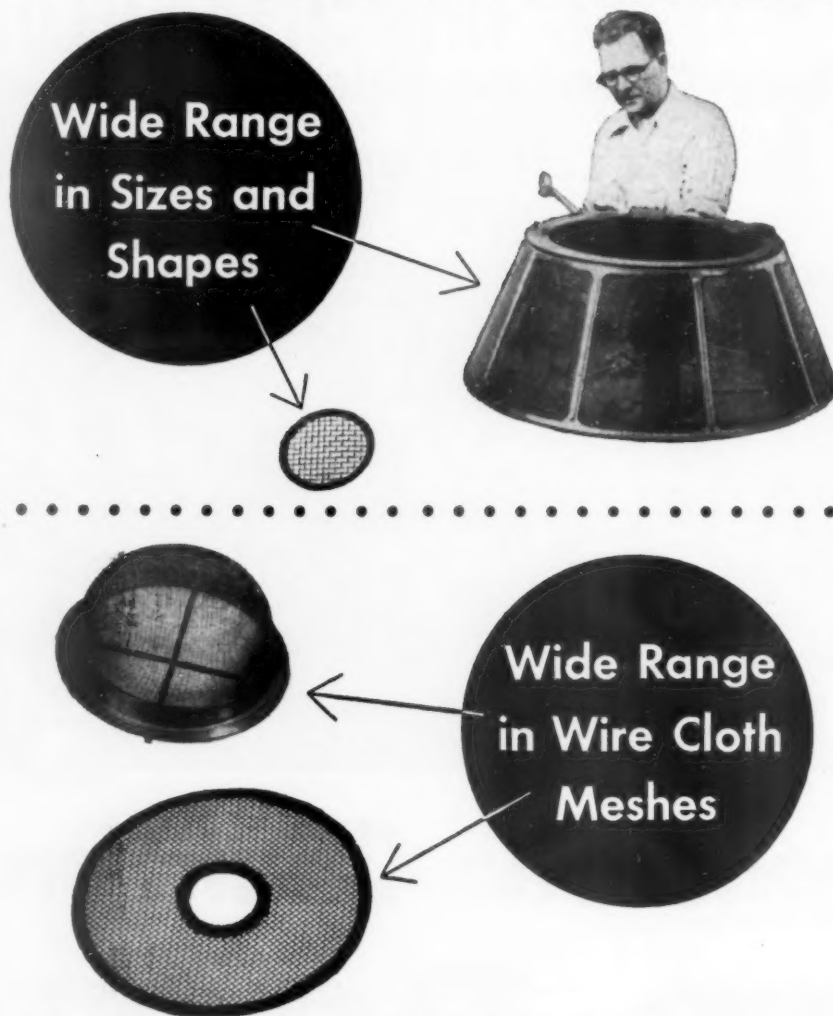
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NEWARK

Fabricated Wire Cloth Parts



We have the facilities and skilled workers to make a great variety of wire cloth parts. We're doing a lot of work along these lines. We do the assembling in our own plant, using our own well known "Newark" Cloth. We bring to this work experience gained by several generations of wire cloth manufacturing and many years experience in fabricating and assembling parts. We'll be glad to quote on your next requirements. If you would like suggestions as to how best make use of wire cloth in the assembling we'll be glad to help. Send us an outline or print of your problem.



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(Continued from page 460)

seen as a great supplier of electric power is at present one of the greatest users of electric power. The significant uses remain in the realm of the military. Extensive industrial and peacetime uses belong to the future." Copies of the report can be had from the Council at 120 S. La Salle St., Chicago 3, Ill.

1 1 1

Uncle Sam Computes Short Form Taxes In 1/70th of A Second

Uncle Sam computes the tax on the short income tax from 1040A in 1/70th of a second. Also, he pays all expenses for collection of a dollar in income tax for an average of 42/100ths of a cent.

This low-cost efficiency is reported by Commerce Clearing House, tax and business law reporting organization, in Taxes, The Tax Magazine.

The speedy computation is accomplished by feeding the figures from reports of citizens earning less than \$5,000 a year, into electronic machines. In fiscal 1952, CCH reports, the Bureau of Internal Revenue audited and investigated over four million returns and, as a result, claimed taxes of nearly \$2 billion more than reported due. This averages about \$500 per return in deficiencies claimed.

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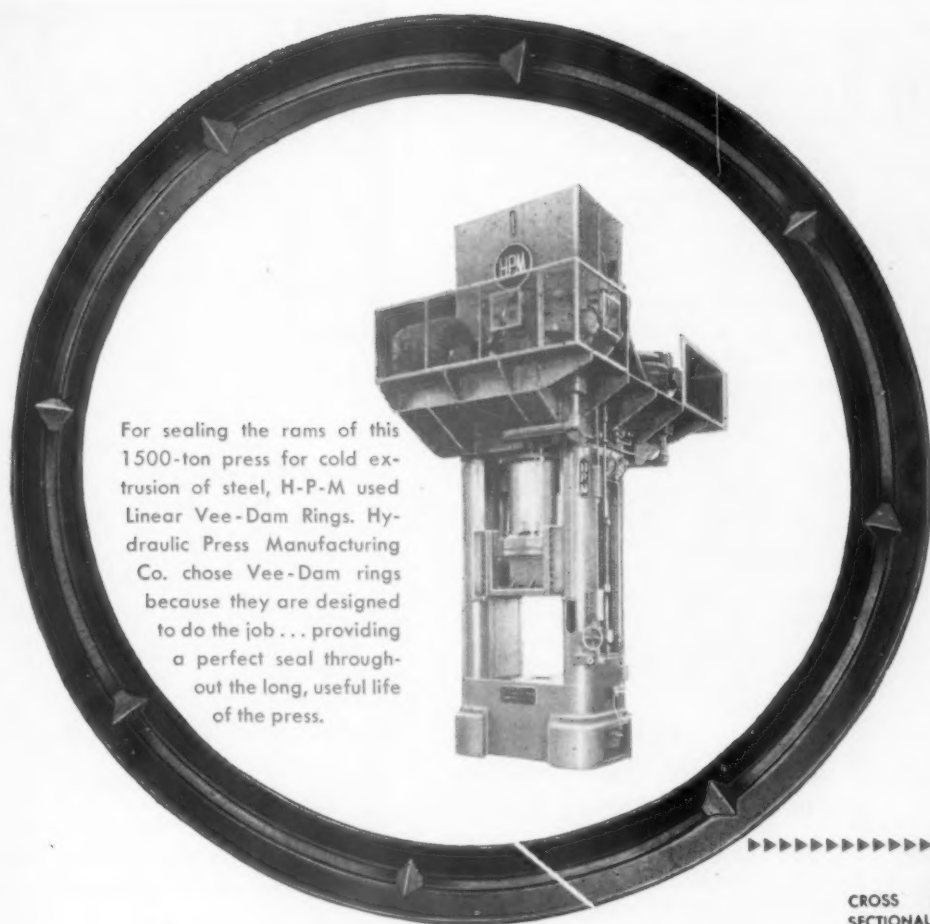
Head Of Office Management Ass'n Cites Values Of Daily Coffee Break

J. B. Andrews, international president, National Office Management Association, has given some advice to Administration leaders in Washington, D. C., who are considering the abolition of the custom-steeped coffee break for government workers. Mr. Andrews says that the coffee break, which civilian business has turned into an important production tool is too valuable to morale and productivity—when properly managed—for Washington to discard without attempting first to correct the ills of the government version.

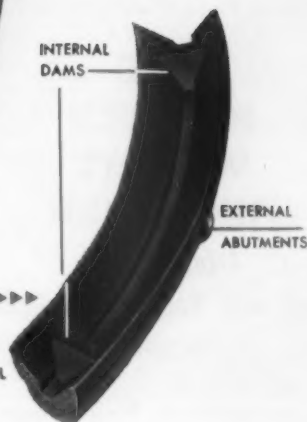
Admitting that the practice has been and is being abused by some employees, Mr. Andrews said that the fault lies with "improper procedures" and not with the coffee break itself.

"Industry turned the coffee break into a plus by regulating it as carefully as any other phase of office or plant management," Mr. Andrews said.

(Please turn to page 464)



For sealing the rams of this 1500-ton press for cold extrusion of steel, H-P-M used Linear Vee-Dam Rings. Hydraulic Press Manufacturing Co. chose Vee-Dam rings because they are designed to do the job . . . providing a perfect seal throughout the long, useful life of the press.



Now—a split V-ring packing that's really leakproof

LINEAR VEE-DAM RINGS

Usual split ring packings are always vulnerable to a common type of leakage. Unless the joint where the two ends of the ring meet is made perfectly tight originally . . . and stays that way in service . . . fluid leaks out between the rings.

LINEAR Vee-Dam rings, however, will not leak even when gaps occur at the ring joint through careless installation or variations in bore size.

The reason? Those sturdy rubber dams, faced in opposite directions, are moulded into the groove hinge area of the Vee-Dam ring. When rings are stacked together, these dams seal off sections around the circumference of the ring . . . form a hermetic barrier around any gap that might occur in the ring joint.

Further protection against leakage is provided by the smaller abutments on the outside shoulder edge which prevents lateral leakage.

LINEAR Vee-Dam rings are fabric reinforced elastomers, tailored for the job. Write or call LINEAR for full details.





THE HOWE Mechanoprint THE MODERN WEIGHT RECORDER

**Accurate-Fast-
Simply and Ruggedly Designed-
Versatile**

The new Howe Mechanoprint, companion instrument to the Howe Teleprint, is a greatly simplified and modern Mechanical Weight Recorder built-in as an integral part of the Howe Tape-Drive Dial head. It is fast, ruggedly designed and has a minimum of working parts to assure the user of trouble-free operation and long life.

The Howe Mechanoprint is furnished with a variety of adaptations for standard straight ticket, for ticket and tape, for odd-sized tickets and with identifier, manual or electrical time and date stamp, consecutive numbering device, etc.

The Howe Mechanoprint working in conjunction with the Howe Tape-Drive Dial Scale, is the very ultimate in a rugged, accurate, dependable Mechanical Weight Recorder and is a worthy companion of the Howe Teleprint (Electronic Remote Weight Recorder).

Ask for descriptive Form AM-A1.
**SALES AND SERVICE
BRANCHES IN ALL
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The HOWE SCALE Co.
RUTLAND, VERMONT

Dept. P5, Rutland, Vermont.

Please send me:

HOWE MECHANOPRINT FORM AM-A1 ☐

HOWE CONDENSED SCALE CAT. No. 11 ☐

Name _____

Title _____

Company _____

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State _____

(Continued from page 462)

Mr. Andrews referred to a survey among 1,160 companies which, he said, proved that the coffee break can be made an asset if properly administered and regulated.

"Some of these companies had coffee served deskside; some permitted employees to take their breaks in company cafeterias or snack bars. Some used other methods, but all of them had one thing in common: they rigidly enforced regulations governing the number of daily breaks and the 10 or 15 minute time limit for such breaks."

Results of the survey showed that 82% of the companies replying noted a reduction in worker fatigue; 75% reported improved employee morale; 62% said the productivity of the workers was increased; 32% noted a reduction in accidents; and 21% said that labor turnover was reduced after the coffee break was installed.

Applies Road Show Technique In Industrial Battery Selling

The Gould-National road show for industrial storage battery users and maintenance people has completed its 1953 eleven-city circuit to the acclaim of well over 3,000 industrial battery customers. The firm has reached the conclusions that (1) full-fledged theatrical presentations work in industrial selling as well as in consumer selling, (2) the added stands in Buffalo, Cincinnati, Milwaukee and Baltimore this year were well worthwhile, and (3) the full Broadway treatment in industrial sales promotion poses more a problem of audience limitation than of audience building. In 1952 Gould-National Batteries, Inc. became one of the very first major industrial firms to attempt a theatrical format for sales promotion to highly technical buyer audiences.

This year's edition, "Gould Nuggets of 1953", placed greater stress upon the importance of good battery maintenance and added new material on battery application. Both tours verified the essentiality in industrial road shows of keeping the serious side of the presentation strictly on the basis of helpfulness rather than mere claim, even though theatrics may be the vehicle.

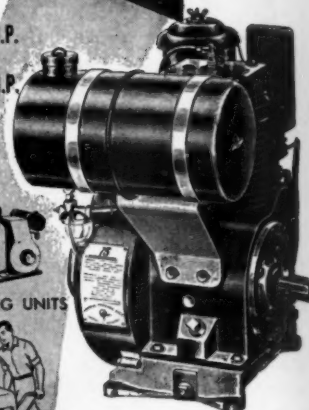
Also again verified was the fact that technical buyers appreciate professional talent, professional script and professional staging whenever entertainment with a minimum of straight commercial appeal is the format.

GLADDEN ENGINES provide reliable power when and where you need it...

MODEL 75-7 H.P.

MODEL 50-5 H.P.

MODEL 40-4 H.P.



PUMPING UNITS



POWER PLANTS



**NOW OPERATING OVER 3000 POWER BUGGIES
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VIBRATORS



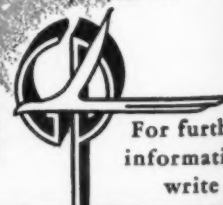
COMPRESSORS

More and more original equipment manufacturers are specifying Gladden engines. They find no other engine performs so well... lasts so long... and saves so much in time and money.

Gladden engines are being used exclusively by two large Western manufacturers on their power equipment. There is a reason for this. They work longer hours and do more jobs for a lower investment than any other gasoline engine on the market today.

Gladden engineers will adapt these engines to special installations or requirements upon request...

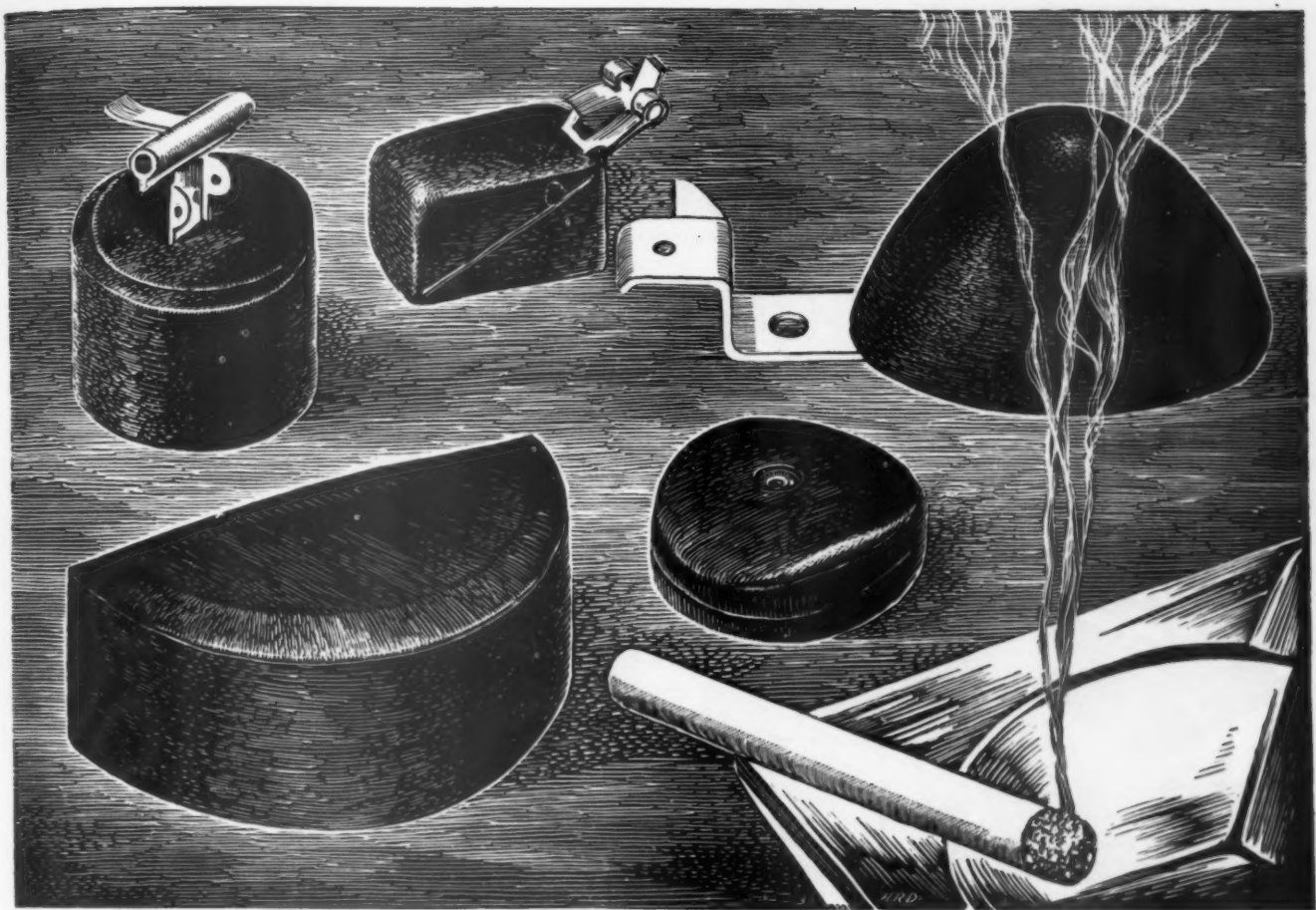
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RAPID SALES AND
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CORPORATION**

Now In the 33rd Year of Engine Building
635 Dept. 100 West Colorado
Glendale 4, California



Now... permanently buoyant floats!

Spongex Cell-Tite floats of hard cellular rubber eliminate float troubles. The *Spongex Cell-Tite* structure of myriad non-interconnecting cells assures no leaks, no absorption; provides permanent buoyancy that soldered metal floats cannot guarantee, nor porous floats maintain.

Spongex Cell-Tite is solid, rigid and strong yet light in weight. It is highly resistant to

aromatic fuels and temperatures up to 250°F. Buoyancy is determined by varying its density. This saves the costs of retooling when flotation needs are altered.

Spongex Cell-Tite floats are but one of the many cellular materials we furnish industry. Perhaps your need is for cord, tubing, strip, rolls, die-cut shapes or molded forms. Write to us today; we'll be glad to help.

Hard Spongex Cell-Tite is available in slabs or simple molded forms.

SPONGEX[®]

Cellular Rubber

for cushioning, insulating, shock absorption, sound and vibration damping, gasketing, sealing, weatherstripping and dust proofing.

THE SPONGE RUBBER PRODUCTS COMPANY

604 Derby Place, Shelton, Conn.

MAY, 1953

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465

COLD HEADED—
ROLL THREADED

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SPECIAL
FASTENERS
and SMALL PARTS
are BETTER

**BECAUSE
YOU
GET**

A greater variety of fasteners and small parts that can be made faster, stronger and more economically by Pheoll's cold heading and roll threading methods. Cold working of wire stock often surpasses turning, casting, stamping, drawing or molding.

LOWER MATERIAL COST . . . Cold-heading results in much less scrap than in metal cutting operations, in fact in the production of most cold-headed parts there is little or no scrap.

LOWER PRODUCTION COST . . . due to high production rate. Cold-heading . . . entirely automatic, is not affected by operator skill, strength or fatigue.

LOWER DIE COST . . . Cold-heading dies cost less, even on more intricate sections, than for any other forming operations.

INCREASED TENSILE STRENGTH . . . Improved physical properties are imparted to all metallic fasteners by cold working.

GREATER TOUGHNESS and FATIGUE RESISTANCE . . . because grain flow of material is compacted and directed to follow contour of piece.

UNIFORMLY HIGH QUALITY PARTS . . . assured because cold working requires materials free from structural defects.

Single or multiple secondary operations can be performed on cold headed parts to produce special characteristics required to fit the part for its particular application. Such operations include drilling, tapping, milling, shaving, flattening, notching, flanging, trimming, bending, off-setting, slotting, fluting, swaging, knurling, pointing, heat treating, plating and finishing—all in Pheoll's modern plant.

PHEOLL PROFIT PRODUCING FASTENERS

Machine Screws	Thread Cutting Screws
Phillips Recessed	Tapping Screws
Head Screws	Cap Screws
Sems	Threaded Rods

PHEOLL

MANUFACTURING COMPANY
15700 Roosevelt Road, Chicago 30, Ill.



**Steelmen See Drop In
Demand This Year**

Edward L. Ryerson, chairman, and Clarence B. Randall, president, Inland Steel Co., said in a recent letter to stockholders that they had "unbounded faith" in the continued growth of industry in the central west, where the company's steel producing plants are located.

The officials said they thought that demand for steel would fall below available supply later this year. They added, "our facilities are well maintained and constantly being improved and expanded. Our raw material reserves are of good quality and ample in supply for the distant future."

Rigid controls held prices unreasonably low during 1952 and they have lagged behind other prices and wage rates throughout the postwar period, the steelmen said. Present prices do not permit an adequate return on newly invested capital even when operations are at capacity levels, they added.

**Ordnance Corps Issues
Request on "Gratuities"**

An interesting statement on the question of gratuities was recently issued to suppliers by the commanding officer of the Ordnance Corps, Red River Arsenal, Texarkana, Tex. Portions of his letter follow:

"No doubt it has been brought to your attention that Army procurement personnel have been instructed by regulations not to take part in any activities or accept gratuities which might in any way be construed to influence or hamper the full and proper discharge of their official duties. The purpose of this policy is to emphasize that all Army procurement transactions are to be governed by the highest standards of ethical conduct.

"In this connection, you are no doubt aware of the 'Gratuities Clause' contained in government contracts. This clause provides that the government may terminate any contract with a company whose officials or agents offer or give gratuities to government personnel with a view toward securing or amending such contract, and permits the assessment of additional penalties, against the company in such case.

"It is not the intent or purpose of this policy to prevent the participation by Army personnel in joint official or semi-official events designed to promote Army-Industry

(Please turn to page 468)

need
relays?

**Potter &
Brumfield
is your
BEST SOURCE
for
CUSTOM-BUILT
RELAYS**

here's why!



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Fast, accurate development of relays and small electro-mechanical assemblies to exact military or industrial specifications.



Engineering

Extensive research, laboratory and model shop facilities available to help solve design engineers' most complex relay problems.



Manufacturing

Three large, fully equipped plants geared to meet today's rigid production requirements . . . single shift capacity of 10,000 relays per day!

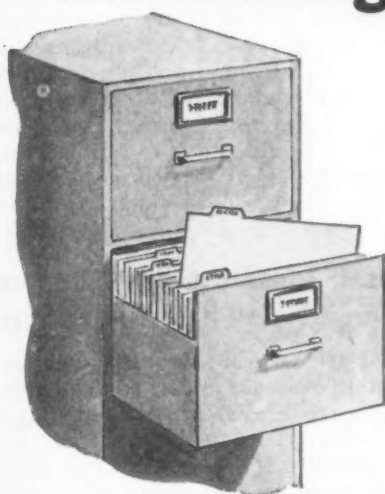
- Samples, Recommendations, and Quotations on Request.
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There's a convincing case for neoprene products in your own purchasing records. It's there in black and white—the long time between orders . . . the low minimum inventory requirements on items such as gloves, gaskets, V-belts, and hose. If you're not already profiting with long-lasting neoprene products, be sure to ask your distributor about them.



V-BELTS—The purchasing agent of a textile mill found that ordinary V-belts used on the drying oven failed within three weeks because of oil and temperatures up to 300°F. Neoprene V-belts were installed . . . are still on the job after six months of uninterrupted service!

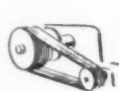
Neoprene V-belts resist oil and grease . . . withstand heat and constant abrasion.



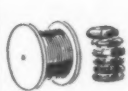
HOSE—You're sure of extra durability when you buy hose made with cover and tube of neoprene. Flexible neoprene hose can be used to handle air, water, oil, solvents and many chemicals both indoors and out . . . outlasts ordinary hose many times under the toughest kind of service.

Neoprene hose is durable . . . resists weathering and most chemicals.

Specify NEOPRENE when you buy these products:



V-belts



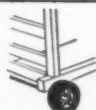
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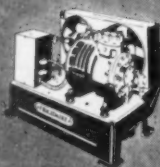
Self-Contained Air Conditioners



Central System Air Conditioners



Room Air Conditioners



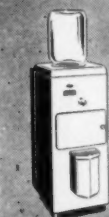
XD Meter-Miser Compressors



Ice Cube Makers



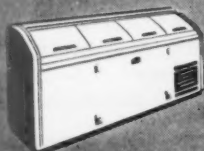
Reach-In Refrigerators



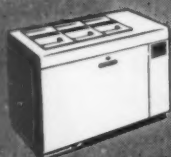
Bottle Type Water Coolers



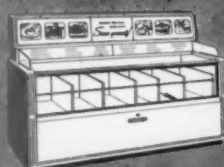
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the most complete line of refrigeration and air conditioning products in the industry.

(Continued from page 466)

harmony and cooperation, nor does it qualify in any way the Army's earnest desire to demonstrate the full cooperation and courtesy which we consider a "must" in our day-to-day contacts with private concerns. On the contrary, it is our intent to guarantee to all businessmen the fair and ethical treatment they desire."

1 1 1

Fuel Drums Get New Life-Span Through Half-Hour Rejuvenation

Fuel drums, used to store and ship petroleum on its journey from oil well to consumer, sometimes get banged-up in their travels. A new reclaiming process which takes about 30 minutes saves them from the scrap heap and restores them to usefulness.

The battered drums first get kinks taken out of the rims, then are "dedented" with high-pressure air. Rust on the inside of the barrel is scraped away and a solution of hot caustic soda is put to work. Wire brushes clean scale and loose paint from the outside, then leaks are plugged, paint is sprayed on, and an infrared drying oven is used. A fog of atomized preservative oil is sprayed on the inside and the drums are sealed. They can be stored in the open as long as 18 months without further attention. Cost of reconditioning fuel barrels is about 71 cents apiece. A new drum would cost nearly seven dollars. The reclaiming process is estimated to have saved the Navy almost \$90,000.—American Petroleum Institute.

1 1 1

Remington Rand Releases Folder On Statistical Typing

New speed and ease in statistical typing through the use of the 10-key tabulator electric typewriter is the subject of a new folder released by Remington Rand Inc., New York City. The four page folder describes a faster way to perform columnar tabulation for billing and statistical work. Without removing her hands from the keyboard the typist can tabulate accurately from column to column, or to any desired position in relation to the decimal point by setting only one stop for each column and by using only one key for each tabulation. A free copy of the booklet, No. RE 8500, may be obtained by writing the company at 315 Fourth Avenue, New York 10, N. Y.

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Get the Best



GET *Round* CHAIN

Outside, *Round Chain*, made by *Round Chain Companies*, might *look* like other chain, but there the similarity ends. Inside, *Round Chain* is superior—superior because it is the result of generations of chainmaking experience . . . PLUS recent new developments by *Round* metallurgists.

This experience and these developments make possible chainmaking advantages like these:

- Choosing the kind of raw metal best suited for making each type of chain.
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Next time you need chain, remember it's what is *inside* a piece of chain that determines the service and life you'll get from it. Today as always, the *IN*side of *Round Chain* is the source of its superiority . . . is the factor that enables it to merit the term "BEST".

Next time, get the BEST. Get *Round Chain*.

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Considered by many production men as the greatest all-purpose power hack saw blade ever developed. "Blu-Mol's" special steel and unique heat treatment are the secrets of this spectacular performer which is cutting costs 20% and more in many plants.



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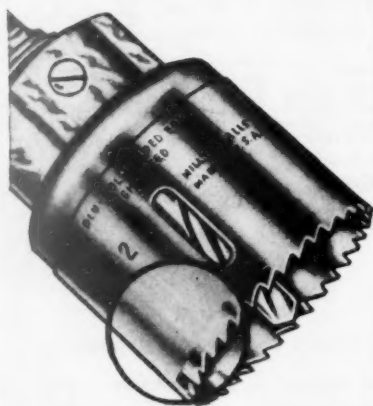
There's only one way to prove a claim like that. Test Millers Falls saws yourself. Try them and see the results you get — in speed, accuracy, long life — compared with the saws you are now using. Then you'll know what Millers Falls never-ending research for better cutting designs, finer steels and more effective heat treating methods really mean in greater cutting power. In hundreds of plants where comparison tests have been run, Millers Falls saws are now standard. Write for full details on these money-saving saws — or, better yet, let us arrange a demonstration.

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FOR EVERY MATERIAL
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Available cut and pre-welded to fit any make and model of machine. Packed in individual boxes for easy handling and storage — clearly marked for quick identification. Or, if you prefer, may be purchased in coils of 100 ft. and up.



New Four-Post Drafting Table Announced By Stacor

A newly designed, 4-post draft-master drafting table, incorporating new special construction features for every specialized drafting need, has just been introduced by the Stacor Equipment Company, Brooklyn, N. Y. The table is built with an all-steel base and selected, smooth finish, kiln dried soft wood top. It has heavy gauge steel tubular legs fitted with stamped steel, smooth bottom shoes to prevent marring floors and all drawers are of steel construction. The top can be adjusted to any desired working angle by two Lifetime Stacor raising devices which slide into table leg, to eliminate annoying projections.

Another new point of interest is Stacor's Lifetime-Steel auxiliary unit. This is a two-drawer unit which fits under the tool drawer to offer convenient space for storing extra tools, ink bottles and for filing papers.

The Stacor Lifetime-Steel drafting table comes in four different sizes, all in the standard height of 37", and is finished in hard baked gray enamel.

1 1 1

Foresees Wide Television Use By Industry

The use of closed circuit television by American business and industry can easily become more widespread and important in the future than television in the home, a video executive recently declared.

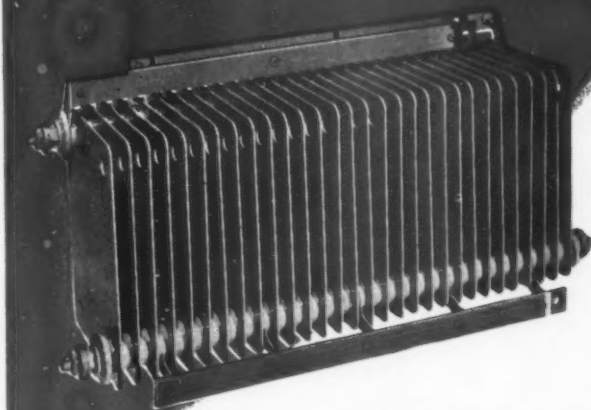
Speaking before the Texas Society of Professional Engineers, Herbert E. Taylor, Jr., manager of the television transmitter division, Allen B. Du Mont Laboratories, Inc., told the group that while use of industrial television today is only a small fraction of the over-all telecasting operation, its use is already spread over a sufficiently varied field to give a good indication of the all-inclusive role it will play in America's future.

"Closed circuit television looms as a business, scientific and industrial tool whose potential is limited only by the imagination and foresight of those who use it," the Du Mont executive declared.

Taylor told the audience that the present uses of television in the national defense blueprint were tremendous but was prevented from elaborating because of security regulations.

(Please turn to page 472)

From
SUBMINIATURE
to **HEAVY DUTY**
From
MILLIWATTS
to **KILOWATTS**



Whatever the DC requirement

there's a ***Federal***

SELENIUM RECTIFIER

to do the job!

**Now
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ENCAPSULATION
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Another Federal "First"... a unique development in component-sealing that expands the application range of rectifiers and opens to industry a new concept in Military Equipment Design.



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Write Federal today for information on *your* rectifier requirements... whatever the size, type or rating. Give your design the benefit of the research, engineering and manufacturing skill that *pioneered* the selenium rectifier... and now keeps "Federal" the standard of industry! Address Dept. F-434A.



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Export Distributors: International Standard Electric Corp., 67 Broad St., N. Y.

MAY, 1953

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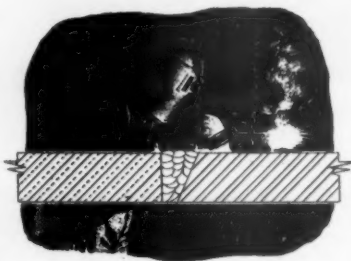
471

BUSINESS IN MOTION

To our Colleagues in American Business...

Late last year an important customer surprised us with an emergency call for help. It is a large company, and an unusually capable fabricator, so it is seldom indeed that it asks us for more than metals. Now it was not only having trouble, but was fast approaching a penalty period of \$2,400 a day for failure to deliver. The difficulty arose in butt-welding aluminum bronze to steel, so two of the men from the Welding Section of the Revere Research Department assembled their equipment and left at once. They found that the test specification called for welding 1½ inch plates, and then making a side bend without damage. This had nothing to do with the stress conditions which the pressure vessel would experience in service, but there it was, and welders had to be qualified by that test. Nobody had been able to pass it, which was why we were asked for collaboration.

- Working closely with the customer, and with the inspectors assigned to approve the work, our welding engineers dug deep into this problem. On Saturday, Sunday and Monday five test plates were made, each showing a definite improvement, though extreme difficulty was experienced in getting a satisfactory joint at the root of the weld. This was due to the fact that the design called for a 25-degree bevel on the steel plate, and no bevel on the aluminum bronze. Good fusion was impossible at the root, as was proved when the bottom of a test piece was cut off; the upper three-quarters of the weld then made the side bend satisfactorily.
- After close mutual analysis of the prob-



lem, permission was obtained to open the joint to a 60-degree angle, to correspond with the joint of the actual vessel. The following day welds of the joint were made without difficulty, and passed the severe test without question. The remainder of the week was occupied in setting up the welding equipment we selected, and instructing the customer's welders in the necessary procedures. One of the methods recommended involved the placing of the beads of weld metal. Small beads were advised, and after each layer had been laid it was carefully power brushed to remove any oxides which otherwise might have caused planes of weakness.

- In all this work it was evident that our men were so obviously familiar with what they were doing, and with the practical limitations and opportunities of the job, that they were able to bring the customer and the inspectors together in a mutual meeting of minds, by showing how to make a weld which would withstand the test. Production began to meet schedules thereupon, just in time to avoid the \$2,400 daily penalty.

- Revere finds that operating a welding service of this kind is good business. It increases our contributions to American industry, and is in line with the recommendations we have given in these pages for many years. Namely, that you take full advantage of the knowledge of your suppliers, as well as buy their materials. No matter what you purchase, nor from whom, there must be one or more firms by whose experience you can profit, if you will just ask for it.

REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

Executive Offices: 230 Park Avenue, New York 17, N. Y.
SEE REVERE'S "MEET THE PRESS" ON NBC TELEVISION, SUNDAYS

(Continued from page 470)

"It would probably stagger the imagination of the average citizen if the military establishment could lift the security curtain and reveal the many advanced uses to which the industrial type of television is being used today by our armed forces," he said.

1 1 1

Purchasing Men Attend Program on Packaging

Purchasing and packaging specialists of seven Chicago area manufacturing firms accompanied officials and representatives of Abana Products Co., Chicago coarse paper distributor, on a visit to Kimberly-Clark Corp. facilities at Neenah, Wis., recently for an informative program on interior packaging.

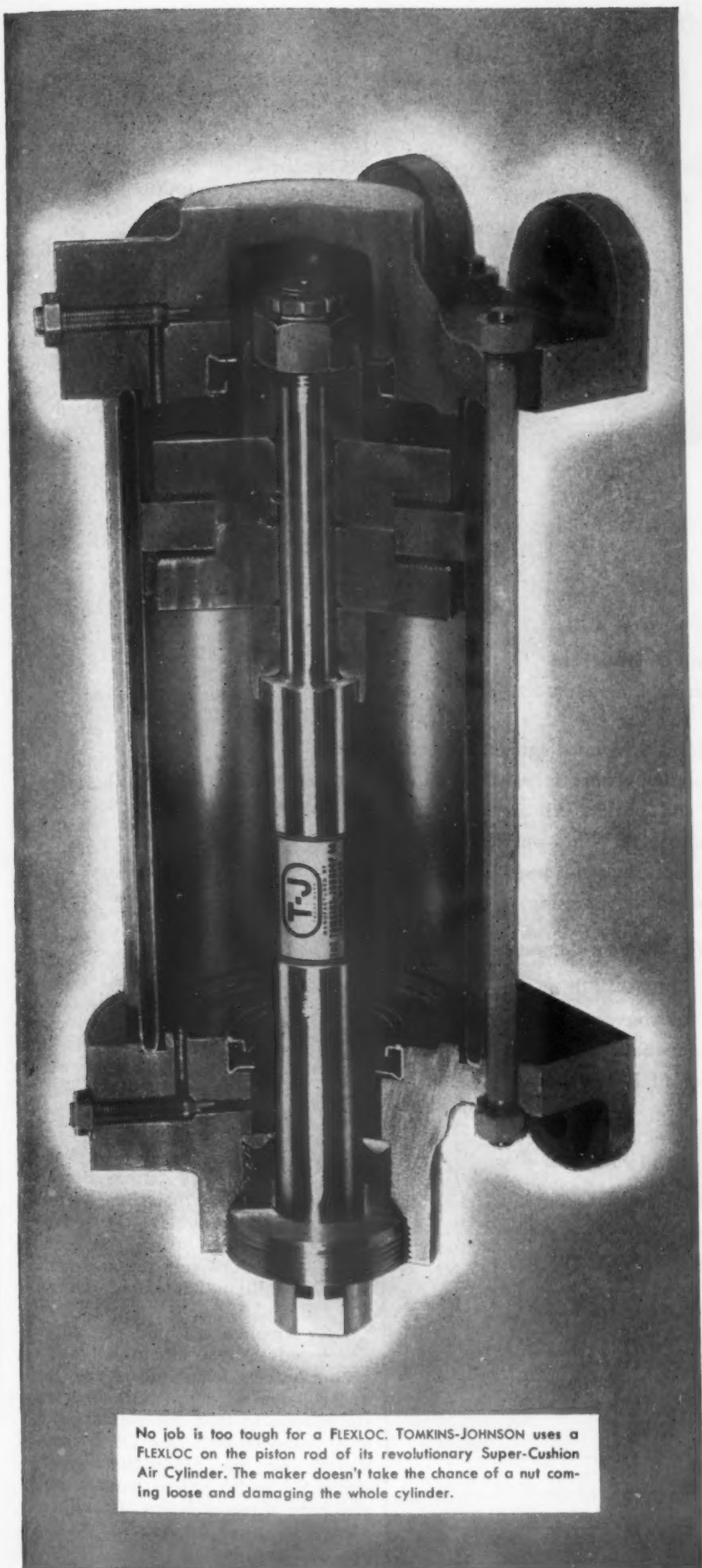


Viewing the display are, left to right, William Kunic, Abana; W. J. Muth, buyer, All Steel Equipment Corp., Aurora; Harry Dehner, Abana; and I. R. Keeker, assistant purchasing agent, Howell Co., St. Charles.

The group toured Kimberly-Clark's Badger-Globe and Lakeview mills, where Kimpak interior packaging and other industrial wadding products are made, and visited the firm's Research and Development Laboratory. Also on the all-day program were talks by Kimberly-Clark staff members on various qualities of Kimpak and its uses in civilian and military packaging.

The group included: W. J. Muth, buyer, All Steel Equipment Corp., Aurora; Allen Gamble, supervisor of packaging, G. D. Searle & Co., Skokie; I. R. Keeker, assistant purchasing agent, Howell Co., St. Charles; A. L. Willis, president, United Felt Corp., Chicago; Arthur Smith, purchasing department, Zenith Radio Corp., Chicago; Wayne Marcuse, packaging engineer, Armour & Co., Chicago; and Maurice Whipple, purchasing department, Bell & Howell Co., Chicago.

(Please turn to page 474)



No job is too tough for a FLEXLOC. TOMKINS-JOHNSON uses a FLEXLOC on the piston rod of its revolutionary Super-Cushion Air Cylinder. The maker doesn't take the chance of a nut coming loose and damaging the whole cylinder.



What FLEXLOC locknuts do for you

FLEXLOCs eliminate complicated, time-consuming methods of locking threaded fasteners. They offer simpler, faster application and safer, more dependable locking than plain nuts and lockwashers, castellated nuts and cotter pins, or nuts and jam nuts. And they won't work loose.

The reasons for all this are plain. FLEXLOCs are one piece—nothing to assemble, come apart, lose or forget. FLEXLOCs are all metal—have higher tensile than most other locknuts and are not affected by temperatures to 550°F. FLEXLOCs are both stop and locknuts—don't have to seat to lock, and stay put anywhere on a threaded member as soon as their locking threads are fully engaged.

SPS can deliver any quantity of FLEXLOCs in a wide range of sizes. Stocks are carried by industrial distributors everywhere. Write for literature. SPS, Jenkintown 31, Pa.

FLEXLOC

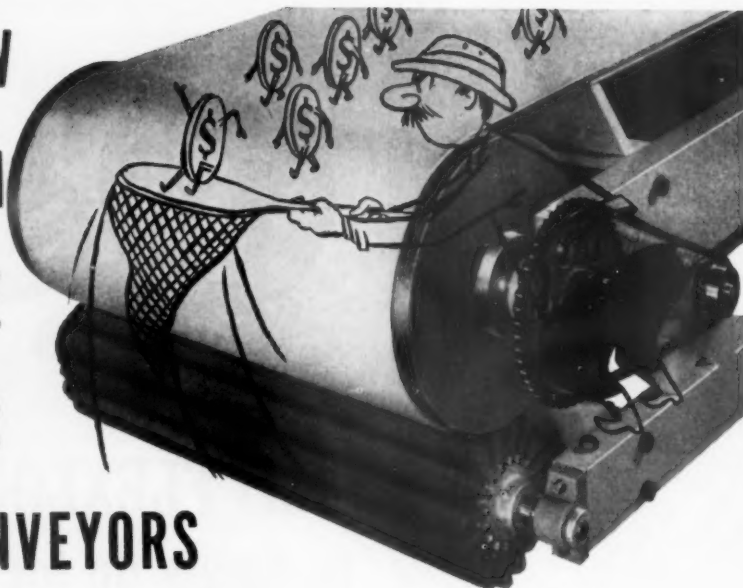
LOCKNUT DIVISION

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Our Fiftieth Year : A START FOR THE FUTURE

HOW MUCH ARE YOUR CONVEYORS WASTING?



**Power Driven FULLERgript BRUSH Saves
Work of 2 Men Shovelling 7 Hours to
Remove Carry-back from Gravel Conveyor.**

During rainy weather some wet gravel would cling to the conveyor belt—just long enough to be carried beneath the conveyor and dropped in the tunnel. This accumulation had to be cleaned out, and the two maintenance men who did this shovelling usually came back on Sundays, at overtime rates. This expense was eliminated by the installation of a FULLERgript

BRUSH. It rotated against the conveyor belt where it passed around the end pulley. All material was knocked off. This put an end to carry-back and the saving was soon reflected in operating cost figures.

Do YOU Have a Conveyor Problem?

SOLUTION—Fill out and mail today the convenient coupon for our recommendations and a **FREE** sample of FULLERgript BRUSH.



THE FULLER BRUSH CO., INDUSTRIAL DIVISION
3554 Main Street, Hartford 2, Conn.

Our conveyor is.....inches wide. We are handling.....

..... Our problem is

Name Title

Company

Street Address

City State

(Continued from page 472)

Abana Products Co. personnel in the group were Herbert W. Pusheck, president; Vernon C. Pusheck, sales manager; and William Kunic, Harry Dehner, Raymond Anderson, Richard Buss, Kenneth H. Hahn, Walter Koehler, Louis Franchini and John R. Brewer, sales representatives.

1 1 1

Reserves of Petroleum and Gas Rise To All-Time Peaks

Proved reserves of liquid petroleum and natural gas rose to new all-time peaks in 1952. Substantial increases were made in both categories, which means that petroleum and natural gas were added to known underground stocks.

The American Petroleum Institute and the American Gas Association made the announcement in their annual report on the status of the nation's proved reserves. These reserves represent the known supplies buried in the ground, the location and extent of which have been established by the industry's continuous drilling program. They do not include any estimate of oil and gas which may later be found.

Highlights of the annual report are as follows:

Proved reserves of liquid petroleum went up to 32.9 billion barrels as of last December 31—an increase of more than 764 million barrels over 1951's former peak;

Proved reserves of natural gas rose to 199.7 trillion cubic feet by the year's end—an increase of 5.9 trillion cubic feet over the record high of the preceding year;

Production of both oil and natural gas smashed all records in 1952, liquid petroleum output having amounted to 2.5 billion barrels, an increase of 60 million barrels over 1951, and natural gas 8.6 trillion cubic feet, an increase of 672 billion cubic feet over 1951.

The liquid petroleum proved reserves include 27.9 billion barrels of crude oil, and 5.0 billion barrels of natural gas liquids. Correspondingly, production in 1952 consisted of 2.2 billion barrels of crude oil, and 284 million barrels of natural gas liquids.

New supplies of liquid petroleum developed in 1952 amounted to 3.3 billion barrels, which means that for every barrel of oil withdrawn from the ground in 1952, the industry not only found enough new oil to compensate for that production, which amounted to 2.5 billion barrels, but also have three-quarters of a billion barrels left over for addition to the proved reserves.

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Cartridge Unit

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For ALL These Reasons

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to exclude dirt and retain proper amount of lubricant.
2. **SELF-ALIGNING**
in any direction without seal distortion.
3. **PRE-LUBRICATED**
with the proper amount of lubricant—for long service.
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of ball path section of inner race ring, with extended part of race left soft for better race-to-shaft locking.
5. **NO HOUSING WEAR**
—patented locking pin and dimple prevent rotation of outer race in housing.
6. **FLOATING BALL RETAINER**
traps lubricant, prevents churning

To the thoughtful engineer or operating executive, *each* of these SEALMASTER features is a convincing reason for choosing SEALMASTER Ball Bearing Units. *Together*, this exclusive combination of basic advantages offers sound assurance of top performance *under all conditions*. Write now for your copy of Catalog 845—complete data on the broad SEALMASTER line.

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MAY, 1953

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The Big Cinch...

Little inch or big one, any job's a lead pipe cinch with Towmotor speeding materials handling up to double and more for you . . . and the boss. Results like that are no pipe dream, thanks to TowmoTorque, the new automatic transmission that helps you crowd extra hours into every working day. And Power Steering that's easy no matter how long your operators drive. Or the new Cushioned Power Diesels that handle like sissies and perform like the frugal brutes they are. Plus many other Towmotor features that help you get so much more done . . . so much more easily. Send today for booklet describing TowmoTorque and Power Steering. TOWMOTOR CORPORATION, Div. 1105, 1226 E. 152nd Street, Cleveland 10, Ohio.



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TOWMOTOR ENGINEERED FOR QUALITY PERFORMANCE

Streamlined Drafting May Save G. E. \$60,000 In Paper Alone

Streamlined industrial drafting is being used by the General Electric Company as one means of combating the skilled manpower shortage.

The more than 5,000 draftsmen employed by the company are being encouraged to strip the frills from their drawings, and, according to Harry A. Winne, vice-president of engineering, thereby save from 20% to 50% of the time normally required to prepare drawings. Substantial savings in other related operations are expected as a result of the switch from methods said to be as outmoded as the horse and buggy.

Draftsmen make the drawings from which manufacturing departments produce the finished product. Simpler drawings are expected to lessen the time required to read them and effect a saving in those departments.

Simplification and elimination of non-essentials on drawings and layouts is being done without surrendering either clarity of presentation or accuracy of dimension.

The men working on this simplified program have found that drafting organizations have been so engrossed with product design and development that they have not realized their drafting practices have lagged behind the general trend of industrial progress. They see no reason for yards of drawings when a few feet will serve the purpose.

In addition to the saving in manpower, there is a definite saving in the amount of materials and facilities. In one instance, a drawing which required 57 square feet of drafting paper was replaced by one with less than 4 square feet without losing clarity or accuracy.

General Electric drafting departments use more than 75 million square feet of drafting paper a year. Under the simplified plan it is indicated that more than \$60,000 a year may be saved in the cost of paper. The drawing which was 57 square feet in size required eight days of one man's time while the less than 4 square feet of drawing required only two days for one man, a saving of 75% in that case.

Although modern industrial drafting embraces many economical practices, three of the easiest and yet most effective which can be applied immediately to reduce the time and effort to make drawings are being encouraged, the company said.

Simplification of delineating, elimination of non-essentials, and ex-

(Please turn to page 478)



Making water work harder

Water alone won't work—it takes *soap* to get Butch really clean!

As recently as a century ago, families made their own soap by boiling kitchen fats with lye they extracted from wood ashes. But since 1837 chemical discoveries as to the nature of fats, glycerin, and alkali have transformed soap-making from a household handicraft into a giant process industry. Today this industry is making water work harder than ever with new synthetic detergents of greater wetting and emulsifying power—even in hard water or acid solutions where soaps won't work.

As a matter of fact, 40% of the cleaning agents now in use are synthetic detergents. Over half of them are alkyl aryl sulfonates, known in practically every home in America by short trade names such as Fab*. They are made from a combination of sulphuric acid and benzene-like oils which is then neutralized to form the non-corrosive sulfonate. ALOYCO valves made of

Aloyco 20 and Inconel are widely used by the three leading firms in the soap field, as well as by other processors of synthetic detergents to withstand the corrosiveness of the basic ingredients.

These harder working "soaps" represent only a small percentage of the many new end-products of modern chemistry that flow through ALOYCO corrosion-resistant valves during their processing. ALOYCO—in its engineering, its research and testing facilities, and in its manufacturing operations—has kept pace with the technical growth of the industries it serves. ALOYCO valves go hand-in-hand with chemical progress.

If your business involves chemical processing, the *Aloyco Corrosion Engineering Service* will be glad to assist you in selecting the proper valve and design for every corrosive service. Write to ALOYCO about your own valve needs.

3.13

*Registered Trade Mark of Colgate-Palmolive-Peet Company

ALLOY STEEL PRODUCTS CO., INC.

1312 West Elizabeth Avenue, Linden, N. J.

Plants: Linden, N. J.; Bloomfield, N. J.; Elizabeth, N. J.



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"I buy from Vinco because rejections have averaged only .6% in five years."

"As a buyer, this is important to me, particularly in the case of mass produced component parts that are needed to keep the production output up to schedule. This low rejection rate also saves the company time and money. Personally, my problems are considerably lessened because when an order is placed with Vinco, I forget it. I know it will be delivered as specified and this permits me to concentrate on other problems. Delivery dates are long on some items but to me, the quality of the work makes waiting worthwhile."

The facilities of Vinco are being expanded and improved to better serve the old and new customers.

VINCO CORPORATION

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The Trademark of
Dependability

VINCO

MILLIONTHS OF AN
INCH FOR SALE



(Continued from page 476)

tensive use of free-hand drawing are being encouraged. In the most simple terms, simplification of delineation and elimination of non-essentials means merely eliminating those things which add nothing to their accuracy, completeness, or clarity.

Extra views, unnecessary elaboration, superfluous lines, repetition, and conventional representation instead of symbolism are but a few examples of work that never should have been done. The direct way, the simple way, are encouraged as the best ways.

1 1 1

Conference Board Studies Rise In Consumer Credit

Following the lifting of Regulation W in May, 1952, new installment sale and loan credit granted for durable goods purchases rose rapidly to reach a record yearly total of \$25.1 billion (in 1952) according to a report recently issued by the National Industrial Conference Board. Credit granted in 1951 totaled only \$20 billion.

The Board notes a 30% increase in installment sale and loan credit for last December (1952) over that month in the previous year (December, 1951). Credit dollar totals for these periods jumped from \$2.0 billion in December, 1951 to \$2.6 billion in December, 1952.

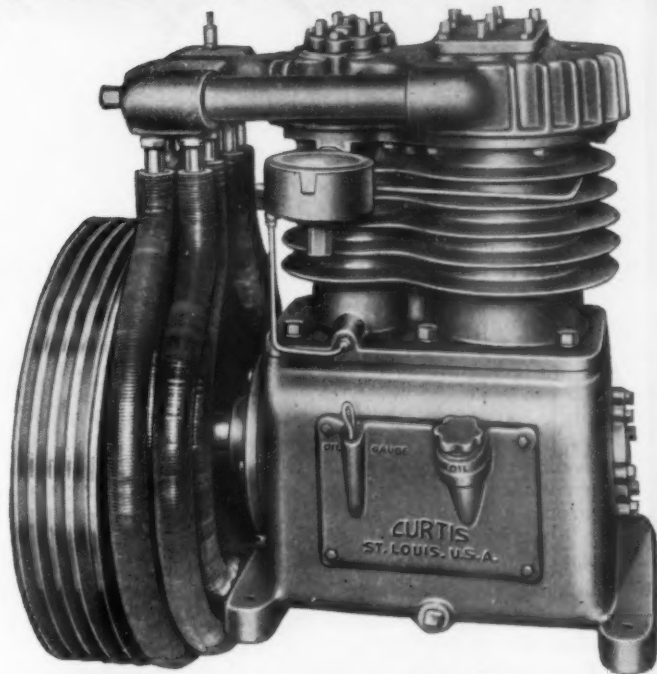
According to The Conference Board, it is still too early to determine just what part of the current "credit boom" is temporary in nature. The marked rise in the proportion of credit sales to total durable goods sales volume during the summer months of 1952 attests to an unexpectedly large backlog, probably stemming from purchases deferred by marginal buyers who had been waiting on the sidelines while Regulation W was in force. While the proportion of credit to cash sales has come down somewhat, it still remains substantially above the pre-May, 1952, levels. However, the analysis adds, the trend of credit sales over the next several months should indicate what part of the increase in installment volume was solely a backlog boom, and what part was a more lasting rise in the rate of borrowing.

At least statistically the Board notes, the recent upsurge in credit buying fits into the trend from cash to credit which has progressed steadily through most of the years since World War II. For most con-

(Please turn to page 480)

MORE AIR Per Horse Power

- IT'S TWO-STAGE
- IT'S AIR COOLED
- SELF OILING



The New Curtis

MODEL 98 AIR COMPRESSOR

TWO-STAGE AIR COOLED 15 AND 20 HORSEPOWER

TWO-STAGE — More air per kilowatt hour, assuring savings in power bill.

AIR-COOLED — No expensive water bills; eliminates plumbing installation costs.

INTERCOOLER — Four section, finned, providing unusually effective cooling between stages; cooled by cyclone of air from fan flywheel.

SELF OILING — Simple, positive centro ring method; provides pressure lubrication of connecting rod and piston pin bearings.

TWO TIMKEN MAIN BEARINGS — Tapered rollers; provide easy adjustment made externally without dismantling compressor.

VALVES — Readily removable as assembled units without removing cylinder head or breaking pipe connections or gasket joint.

CRANKSHAFT — Counterbalanced, drop forged — two main bearings — no overhung bearing.

PRECISION WORKMANSHIP — Assures long life and minimum maintenance.

EXPERIENCE — Backed by 99 years of manufacturing — assures you dependable, troublefree service.

Available as a simple compressor or base mounted — motor driven.

LET ONE MAN DO THE WORK
with this Curtis air-operated
equipment.



AIR CYLINDERS — for almost any pushing, pulling or hoisting operation.



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CURTIS PNEUMATIC MACHINERY DIVISION

of Curtis Manufacturing Co.
1908 Kienlen Avenue, St. Louis 20, Mo.

I am interested in items checked below:

- ☐ THE NEW MODEL 98 ☐ AIR HOISTS ☐ AIR CYLINDERS
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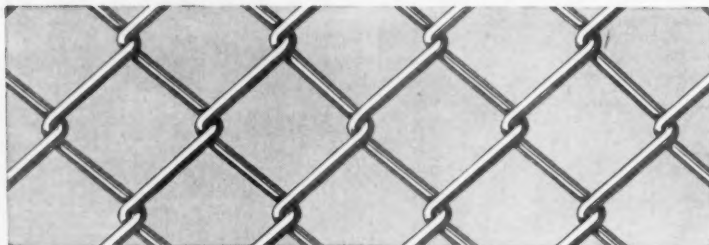
MAY, 1953

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479

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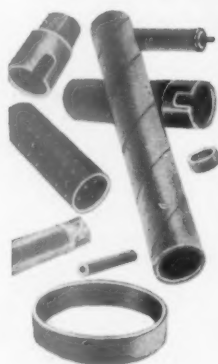
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CAN WE SERVE YOU

TUBE SHAPES AT A SAVING TO INDUSTRY



SONOCO makes tubes by the spiral, parallel and drawn processes now in use for:

Protective packaging
Electrical fuse tubes
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LOWELL, MASS.
GRANDY, QUE.

DEPENDABLE SOURCE OF SUPPLY

(Continued from page 478)

sumer durable goods—automobiles, furniture, television and radio sets, appliances and jewelry—credit sales are found to be back to, or close to, prewar relationships to total sales. The larger proportion of goods sold on credit, the lower downpayments, the longer instalment contract terms—all are beginning to look more and more like prewar figures.

In fact, the Board adds, the proportion of consumer income currently being set aside for debt repayment appears to be even higher than prewar: 9.3% in 1952, compared with the prewar record high of 9.1% in 1941.

Possible Cause

Doubtless one of the major reasons underlying the marked shift back to credit buying since 1945 has been the gradual depletion (in terms of purchasing power) of the huge store of liquid assets built up during World War II by families who normally buy on credit. Since the end of the war, the Board notes, rising prices have cut the purchasing power of consumer holdings of cash and government securities by about 15%. At the same time, unit purchases of consumer durables have apparently increased about 20%. Thus, as a revolving fund to finance consumer purchases, liquid assets have declined significantly, and the gap has apparently been filled by the use of instalment credit.

1 1 1

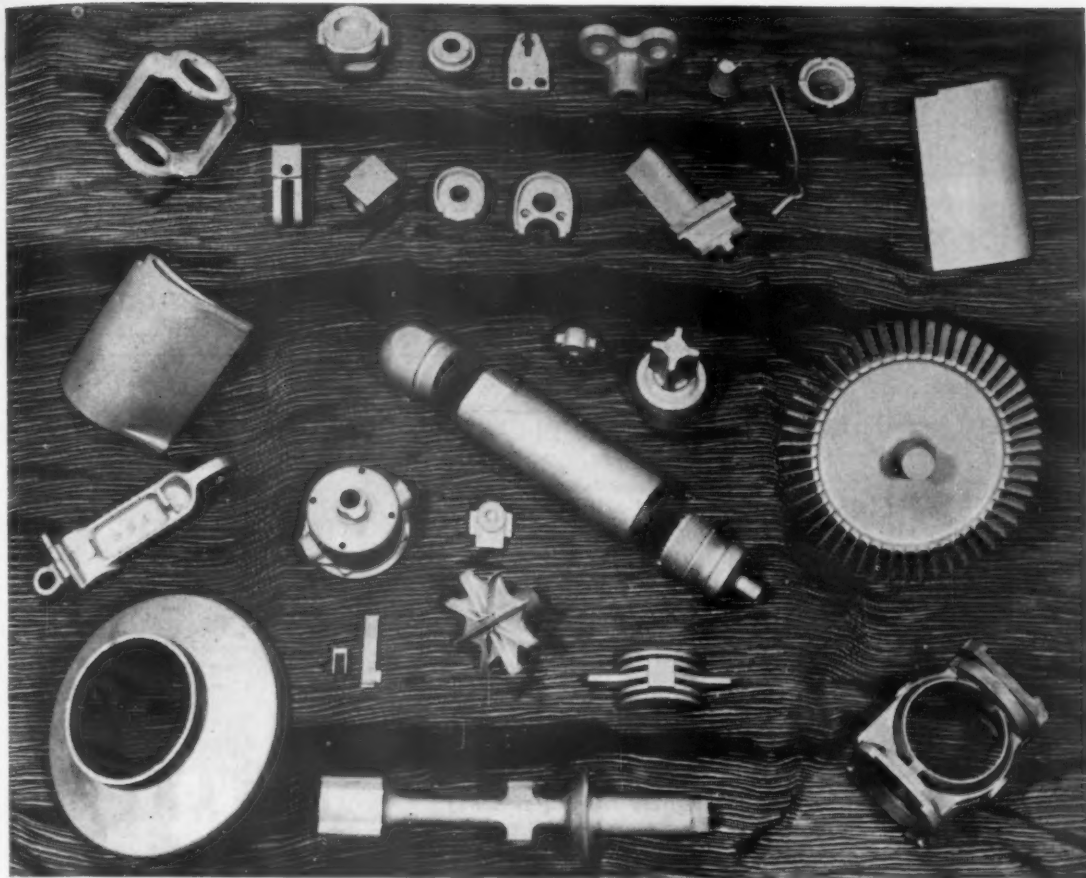
Safety Council Offers Data on First Aid Kits

"Unit First Aid Kits," a new National Safety Council data sheet, provides a useful guide to better first aid for companies with scattered operations.

Crews on mobile equipment or groups working in isolated areas benefit from these unit kits with treatment and dressings packaged for one-time use. With no half-empty bottles and half-used rolls of gauze, the kits remain sanitary during periods of infrequent use.

The kits come in four sizes. As a rule, one 24-unit kit should be used for each 50 employees. Ten and 16 unit kits are satisfactory for smaller groups.

Copies of "Unit First Aid Kits," data sheet D-202, are priced at .17 each. Quantity prices are proportionately less. For additional information write the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.



Inco-Cast precision investment castings offer a practical way to make a wide variety of difficult-to-machine shapes including: thin vanes, wing sections, non-critical gear teeth, slots and threads.

How you can save up to 50%...on small parts

With Inco-Cast precision investment castings, others are saving as much as 50 percent of the production cost on small parts.

Perhaps you can, too. If you need small parts with complex internal sections, shallow blind holes, unmachinable cavities or other shapes that are costly to make, it may pay you to investigate precision casting. For precision casting lends itself to economical production of intricate shapes where tolerances as close as .005" per linear inch are needed.

Inco-Cast precision castings not only save you money—they make it possible for you to use extra strong and harder alloys for longer service life...

- You can reduce your machine shop bottleneck because they require little or no machining.

- They make possible the use of hard-to-machine metals.

- In many applications you can get parts made by precision casting that

would be impossible to make by other methods.

- Frequently it's even possible to simplify your designs when you use precision castings.

If you have a problem with a part whose cost of production seems out of line — if it's a shape where a single casting might eliminate many machining operations — if you have a design that cannot be worked out economically — just send a blueprint or actual sample with an estimate of the quantity needed.

Inco casting specialists will analyze your problem and, if precision casting is a practical solution, they will give you an estimate of costs and their suggestion on the best alloy to use.

In the meantime, for more detailed information about this money-saving process, write for your free copy of "Investment Casting—Its Advantages and Practical Applications."

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Nickel-Base Alloys
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Los Angeles, New York, Philadelphia,
Portland, San Francisco, Bridgeport, Conn.

Denver Association Hears Talk On Conditions Today, Tomorrow

A discussion of "Conditions As They Are Today," and a forecast of things to come was presented by Eugene Cervi, publisher of Cervi's Rocky Mountain Journal, at the March 19 meeting of the Purchasing Agents Association of Denver, held in the Brown Palace Hotel. Mr. Cervi discussed local, national and international conditions.

During the business session which followed the talk, the following new members were inducted into the association: Dean Bennet, American Pipe and Supply; Lester Barber, replacing William M. Hammond of Denver Chicago Trucking; James A. Rennie of Denver Oxygen Company, and Willard C. Baker of Bowman Biscuit Company. Committee reports were presented and the meeting was adjourned.

Following adjournment, the educational forum convened and Carl Roberts spoke on the operation of his purchasing department at Great Western Sugar; where his purchases amount to approximately \$10 million annually.

1 1 1

Chicago Association Members Hear Edwin Vennard Speak

The Purchasing Agents Association of Chicago heard Edwin Vennard, vice president of Middle West Service Company, speak on "Business Men's Responsibility in Keeping Freedom," at its April 9 Meeting in the Hotel Sherman.

Mr. Vennard is in charge of rates, new business, advertising and public and employee relations for his firm. He formerly was employed by the General Electric Company in the testing department in Schenectady, N. Y.

1 1 1

Informative Program Presented At Cleveland's March Meeting

Dean Newhouse of Case Institute of Technology spoke on "What Makes a Leader" at the March 19 meeting of the Purchasing Agents Association of Cleveland, held in the Hotel Cleveland.

At the afternoon forum session members discussed "How Vulnerable To Court Action Are Purchasing Agents Under The Robinson-Patman Act?" Panel members were W. H. Chamberlain, secretary and senior counsel of Thompson Products, Inc., and E. E. Ford, counsel, Thompson Products.



HAND CLEANERS

Skilled hands are a valuable asset to management, as well as an important responsibility of it. Mione Hand Cleaners can insure that asset by helping to share the responsibility for keeping skilled hands in prime working condition.

WORKERS like the quick-lathering, gentle-scrubbing, easy-rinsing action of Mione. And its very definite skin conditioning value.

MANAGEMENT likes the safe, sanitary, efficient, trouble-free Mione features, plus its economy per pound, low cost per scrub-up, and the basic economy of skilled hands always at top productivity.

YOUR SUPPLIER of washroom needs can give you full particulars about Mione so that you, too, can benefit from the know-how gained from 40 years of making nothing but better and better soap for the hands.

**WRITE US FOR THE NAME OF THE
MIONE SUPPLIER IN YOUR AREA**

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**MANUFACTURING
COMPANY**

Makers of famous hand soaps
for 40 years

COLLINGDALE

PENNSYLVANIA



"A Triple play BY RB&W REALLY SAVED US PLENTY!"

"It took us by surprise," Al went on, "when an RB&W man told us* he could speed up assembly of this precision screw-and-clamp unit and save us money besides. We figured we'd been doing O.K. the old way."

"What was the old way?" asked Mac, who'd recently started in at the shop.

"Well, it was a one-two-three operation. We used to machine the slotted-head screw for the clamp on that machine over there. Then we'd make a special collar, and fit it around the screw head to prevent the screw-driver from slipping out of the slot while the clamp was being applied or adjusted.

"What RB&W did was to cold-form the whole thing—screw, slot and collar—all in one piece. Wasn't an easy job, either—they had to strike a slot in the screw head and form the collar at the same time. Now we're saving one-third on our previous assembly costs—along with the price of the special collar."

Which proves that you can gener-

ally cut costs, if you look hard enough... even in such simple things as fasteners. It also underlines the creative approach to fastening problems you can expect from RB&W, as well as practical experience in designing and fabricating. If the fastener you need can't be supplied from our extensive stock, we'll study your assembly operation and make the right one for the job.

Remember—for any fastening operation, it's a smart move to call in RB&W. You can count on RB&W bolts, nuts, screws and rivets for uniform accuracy, dependability and physical properties. And you can also count on fast service from RB&W's strategically located plants at: Port Chester, N. Y., Coraopolis, Pa., Rock Falls, Ill., Los Angeles, Calif. Additional sales offices at: Philadelphia, Pittsburgh, Detroit, Chicago, Dallas, San Francisco. Sales agents at: Portland, Seattle. Distributors from coast to coast.

**RUSSELL, BURDSALL & WARD
BOLT AND NUT COMPANY**

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*George K. Garrett Co.,
Philadelphia, Pa.

RB&W 108 YEARS MAKING STRONG THE THINGS THAT MAKE AMERICA STRONG



Now you can Avoid Costly Downtime of your electronic equipment



NOW YOU CAN AVOID possible production shutdowns due to unexpected shortages of key tube types. Without extra cost or effort, you can be sure you have the *right* tubes on hand when you need them.

HERE'S ALL YOU HAVE TO DO . . .

Get in touch with your RCA Tube Distributor. Tell him you would like to take advantage of the free RCA Tube Requirement Analysis Program.

Your RCA Tube Distributor will survey your electronic equipment, analyze your tube requirements, and prepare a suggested inventory control system for your spare tube stock . . . tailored specifically to your equipment and your operation. There is no charge or obligation for this service.

RESULT: No shortages. No "overstocks." No costly downtime of your electronic equipment.

RCA's new Tube Requirement Analysis is available exclusively through your local RCA Tube Distributor. Call or write him today. No charge or obligation.



RADIO CORPORATION of AMERICA
ELECTRON TUBES

HARRISON, N. J.

Dallas Association Members View Two Color Films

Members of the Purchasing Agents Association of Dallas viewed two color films at recent meetings in the Melrose Hotel.

At the March 26 meeting, "Skylines Unlimited" was presented by George N. Brown and A. B. Johnson of Otis Elevator Company.

"Winners All," was the title of a film shown at the April 9 meeting by L. C. Doran, Chevrolet Motor Division, General Motors Corporation.

1 1 1

New Castle Association Has Joint Purchasing-Traffic Meeting

George Staples, vice president of Cities Service Oil Corporation, was the featured speaker at the joint meeting of the Purchasing Agents Association of New Castle, Pa., and the Lawrence County Traffic Association in the Castleton Hotel, March 18. Mr. Staples spoke on "Transportation and Purchases of Petroleum Products."

1 1 1

Interesting Program At March Meeting of New York Association

Members of the Purchasing Agents Association of New York heard Dr. Murray Banks speak on "How To Live With Yourself, Your Boss and Your Staff," at its March 17 meeting in the Builders' Exchange Club.

Prior to the meeting John. R. Zehner, Purchasing Agent, Turner Construction Company, directed a forum on contracting for building construction. The forum included a question and answer period.

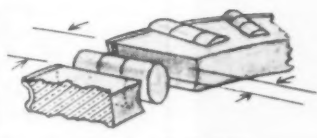
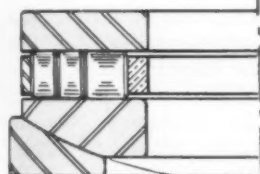
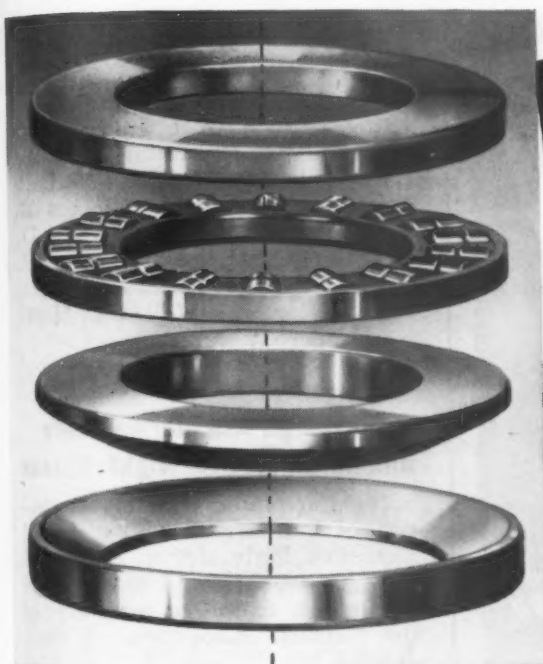
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Prof. Lewis Speaks At April 13 Meeting of N. E. Association

Howard T. Lewis, Professor of Marketing, Harvard Graduate School of Business Administration, was the principal speaker at the April 13 meeting of the New England Purchasing Agents Association, in the Hotel Vendome, Boston. Mr. Lewis holds the J. Shipman Gold Medal, the highest award granted by the National Association of Purchasing Agents.

At the afternoon meeting Percy A. Coomber, Massachusetts Institute of Technology, Project Lincoln,

(Please turn to page 486)



PARALLELISM

ACCURATE PARALLELISM between the rollers and the matched thrust plates is repeated in the parallelism between the separator slots and the rollers themselves—all adding up to quietness, equalized wear and longer life.

THRUST

RADIAL



RIGHT ANGLE
Roller Ends, precisely square to avoid end-rub, oscillation and side-shock.

● **RIGHT ANGLE**
Bearing Surfaces with parallelism that results in unwavering right-line rolling.

● **RIGHT ANGLE**
Separator Slots accurately machined to prevent roller skew, slide and uneven wear.

Held to extremely close limits of parallelism, every roller—every race—every thrust plate in a Rollway Bearing is an engineering masterpiece of matched precision and right-angle trueness. As a result, friction losses are low—load capacity and service life high.

Rollway Radial and Thrust Bearings offer the widest selection in types and sizes, available for quick replacement through authorized distributors. Consult your classified phone directory under BEARINGS.

Our engineers are available without cost or obligation to assist you in selecting the correct Rollway Bearing for your needs. Call your nearest Rollway sales office.

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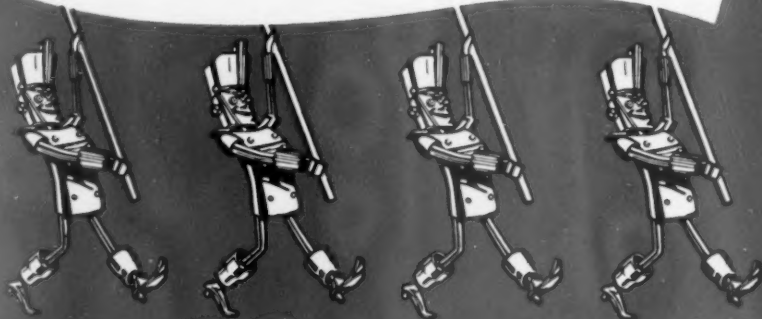
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Cleveland
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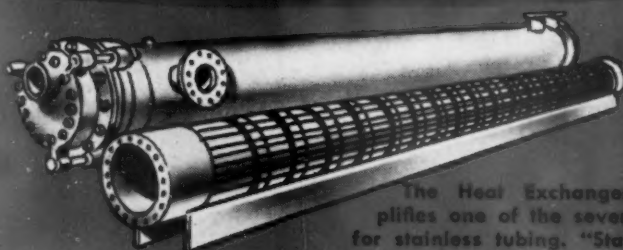
ROLLWAY BEARINGS

Complete Line of Radial and Thrust Cylindrical Roller Bearings

Keep in Step with— RIGID GOVERNMENT TUBING REQUIREMENTS



SPECIFY **"Standard"**
for Welded Stainless Steel Tubing



The Heat Exchanger exemplifies one of the severest uses for stainless tubing. "Standard's" stainless tubing meets this, as well as many other different requirements for strength, and heat and corrosion resistance.

Deal with the Specialist among Specialists

A tubing specialist, like other specialists, knows his trade best.

When you deal with "Standard" you deal with a tubing specialist who manufactures millions of feet of tubing every month from stainless and carbon steel—and for

25 years has been serving all types of industry for mechanical and pressure tubing applications.

If you need stainless tubing, be sure you specify "Standard". It pays to deal with the tubing specialist among specialists.

Stainless Tubing Size and Thickness
3/4" O.D. to 3" O.D.
.028 to .095 wall
Carbon Steel Tubing
1/2" O.D. to 5 1/2" O.D.
.028 to .260 wall



THE STANDARD TUBE CO.

Detroit 28,

Michigan

Welded Tubing

Fabricated Parts

STANDARDIZE with STANDARD — It Pays

(Continued from page 484)

led a discussion on value analysis.

The nominating committee submitted its slate which will be voted on at the May 11 meeting. Nominations include: President, Herbert Layport; vice president, Robert E. Shillady; treasurer, George D. Seguin; national director, Wilber G. Hayward; directors for two years, John H. Corcoran, William C. Hoffman, Albert W. Richards.

1 1 1

Pittsburgh Association Holds Annual Executive Night Dinner

The Purchasing Agents Association of Pittsburgh held its annual Executive Night dinner March 17 in the Hotel William Penn. George A. Renard, executive secretary of the National Association of Purchasing Agents, was the principal speaker.

The following candidates have been nominated to serve for the year beginning July 1, 1955: President, T. R. Zenk; vice president, T. O. English; secretary, Wayne Rawley; treasurer, Frank R. King; directors for two-year terms, R. B. Averill, S. D. Clarke, Jr., H. E. Cooley, F. B. Knauss, W. R. Metzger, E. L. O'Meara, G. N. Powell, D. A. Riggs, P. M. Snyder, A. B. Wadsworth; national director, J. E. McWilliams.

1 1 1

Brochure on Export Packaging Available

National Wooden Box Association has announced publication of a new brochure entitled "Export Packing," prepared for American manufacturers who ship products to overseas customers.

According to C. D. Hudson, the association's executive vice president, it is hoped "the manual will assist exporters in maintaining and expanding the flow of American merchandise and materials to foreign markets." It is intended as a guide for shippers to assure safe delivery of goods through proper application of shipping containers. The manual is printed in color and liberally illustrated. "Distribution of Export Packing" to American manufacturers is being handled through individual members of the box and crate industry. Manufacturers may receive a copy through their container suppliers, or application may be forwarded to National Wooden Box Association, Barr Building, Washington 6, D. C.

Mr. Bernard Castro

PRESIDENT

CASTRO CONVERTIBLE CORP.

Tells:



"How Railway Express helped us expand our business"

"In building Castro Convertibles, we are concentrating on high-quality convertible furniture that is beautiful, functional, simple and easy to use.

"Ours is a young but fast-growing business. In the early stages of development, Railway Express helped us put our shipping operation on a regular-schedule basis. Now we are able to tell a customer exactly when to expect delivery. This is a very important aid in creating customer confidence, avoiding complaints, and building a new market.

"Because our Convertibles contain precision-built mechanisms, they must be handled with care to prevent damage or soiling of the fabric. We are always sure of safe, careful handling, and fast, door-to-door delivery when we ship Railway Express."



If your product requires careful handling, prompt pickup and fast delivery, call Railway Express. You'll find it always pays to...

use the complete shipping service...



No size or weight limit • Pickup and delivery, within prescribed vehicle limits, in all cities and principal towns • Liberal valuation allowance • Receipt at both ends • Ship collect, prepaid, paid-in-part, or C.O.D. • Ship by Air Express for extra speed.

Now

**greater versatility
greater efficiency**



TO IMPROVE cutting efficiency and production, three models of the Wells Metal Cutting Band Saw line are now available with expanded range of cutting speeds as standard equipment. The table below shows the new speed ranges for these outstanding machines . . . Wells Nos. 5, 8 and 12 . . . first in the horizontal field. Higher speeds are available when required.

The new cutting speeds coupled with such proved Wells advantages as sturdy construction, ease of operation, real dependability and low cost make these machines even more profitable for you to use. Ask your Wells Dealer for full information or write, requesting catalog G-52 giving specifications and design details for all models.

Model	Capacity		Selective Cutting Speeds
	Rounds	Rectangular	
No. 5	5" O.D.	5" x 10"	50, 90, 160, 250 f.p.m.
No. 8	8" O.D.	8" x 16"	50, 100, 175, 275 f.p.m.
No. 12	12 3/4" O.D.	12" x 16"	60, 115, 200, 300 f.p.m.

SEE US AT THE WESTERN METAL SHOW



The Pioneers of Horizontal
**METAL CUTTING
BAND SAWS**

WELLS MANUFACTURING CORPORATION
2400 JACKSON AVE., THREE RIVERS, MICHIGAN

How The Purchasing Department Contributes to Cost Reduction

(Continued from page 103)

of on monthly volume.

(3) It assures continuity of supply according to scheduled requirements and deliveries, tending also to facilitate prompt deliveries when needed from the authorized production in advance of current releases, and avoiding the danger of material shortages through advance procurement by the supplier.

(4) It makes possible most economical production and material cost on the part of the supplier, which should be reflected in the contract price.

(5) It establishes a close and continuing relationship with the supplier, as a matter of mutual interest and advantage.

While this contract policy and method of anticipatory purchasing is primarily applicable to mass production schedules for standard products, as in the Tractor Division, it has also been found to be a practicable and cost-saving procedure in other types of manufacture. A substantial number of items for the Machinery Division, which operates more on the order of a job shop, making products to specific order, and some maintenance requirements have also been brought under this type of contract purchasing.

One of the unique characteristics of the purchasing function is the opportunity—and the necessity—of working with all other departments of the organization and with supplier companies. This cooperation and breadth of experience, plus the development of appropriate and constructive purchasing techniques, put purchasing in an exceptionally good position to make a real contribution to the over-all management objective of reducing product costs to meet competition and give the customer greater value.

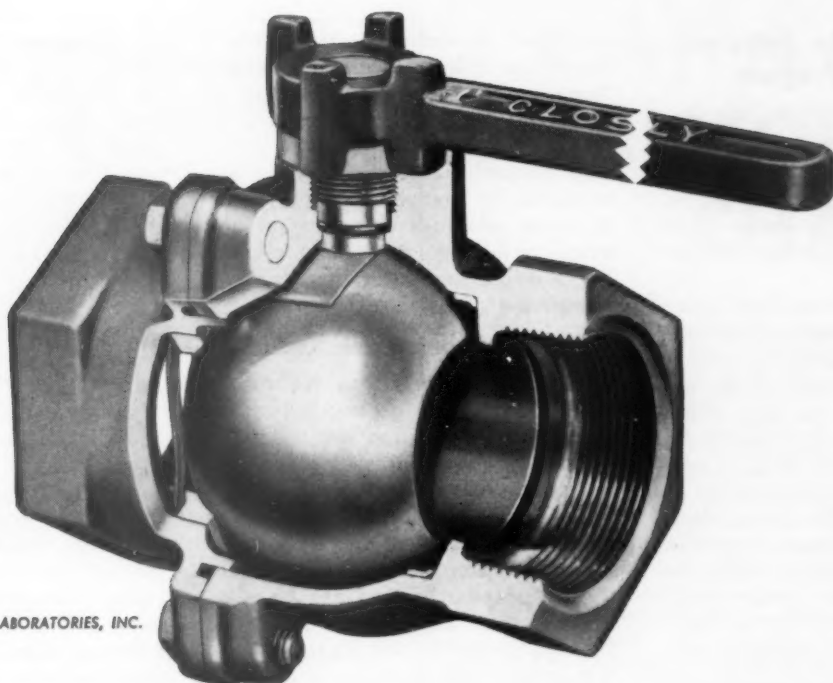
1 1 1

New Magnetic Material Produced

A new "soft" magnetic material composed of noncritical metals has been developed by the Naval Ordnance Laboratory. Named 16-Alfenol, the new material is composed of 16% aluminum and 84% iron. Containing magnetic properties which should make it valuable in many applications, 16-Alfenol with properties superior to silicon iron will be especially useful in transformer cores such as commonly used in high frequency communications instruments.

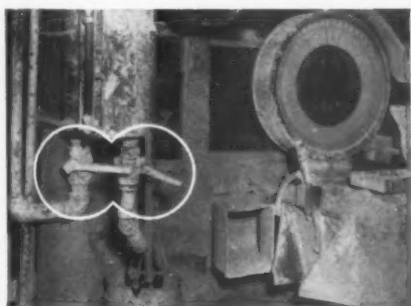


TESTED BY UNDERWRITERS' LABORATORIES, INC.

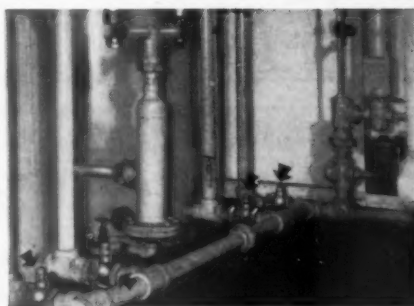


Breaking Records Throughout Industry!

FOR LONG LIFE . . . FOR ECONOMY . . . FOR SAFETY



Leading glass manufacturer reports Rockwood Ball Valves, operated 1500 times a day in a mixing process, were only valves to stay in service over a year.



Maintenance engineer of large gas company says: "Easy operation and no maintenance cost make Rockwood Ball Valves far ahead of any others we have used."



On Texas transport firm's fleet of propane-butane trucks, the leakproof construction of Rockwood Ball Valves make them safest for handling inflammable gases.

Here's why Rockwood Ball Valves give you more of what you want in valve performance:

FULL ROUND FLOW . . . no change in shape or volume of the fluid stream . . . no turbulence . . . minimum friction loss.

QUICK OPENING AND CLOSING . . . needs only a quarter turn, even under full pressure.

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STAYS LEAKPROOF . . . in closed position, pressure of fluid automatically positions ball against synthetic rubber seat to form a tight seal.

It will pay you to investigate how these advantages can benefit your own applications. Send for bulletin. Rockwood Sprinkler Company, 116 Harlow Street, Worcester 5, Mass. Distributors in all principal cities.

Some Prominent Users

Libby-Owens-Ford Glass Co.
Revere Copper & Brass, Inc.
Bird Machine Co.
Remington Rand, Inc.
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Daggett Chocolate Co.
Also approved by Und. Lab.
for L. P. G.

ROCKWOOD FULL-FLOW BALL VALVES

THE FLOW IS AS ROUND AS THE PIPE ITSELF

Mechanization—An Important Purchasing Program

(Continued from page 105)

or decrease accident hazards incident to the work?

"The cost of one device is Do you think it would prove to be economically advantageous for use in your division?

"Can you suggest any other company groups that might advantageously use this device?"

Along with the inquiry sheet, interested individuals are sent trade literature, magazine advertisements, catalogs, etc. that may help to explain the equipment more fully.

These inquiries, after being filled out by the men in charge of specific functions, are returned to their respective department heads and, where favorable, serve as a compelling argument for purchase approval.

Some of the outstanding examples of savings through purchase of new equipment are illustrated elsewhere in this article.

There are many others. A special type dump truck with several movable dump bodies is doing the job of four ordinary dump trucks. This investment has more than halved

the cost of ordinary dump truck operation. It leaves the empty dump body on the job for loading while it is hauling and dumping a filled one.

A portable, electrically operated machine for compacting cold-patch in street openings by vibration has saved 50% over previous methods. Its portable generator can be used to operate other electric tools.

New Opportunities Ahead

Mr. Hogg expects that eventually the program will go much further beyond mechanization and into the areas of value analysis of all materials, tools, equipment and products purchased. This would involve, among other things, the important standardization factor. One instance of how standardization has already brought the company savings is in the field of distribution transformers. A member of the purchasing department made a study of the possibilities of standardization of this expensive capital equipment that led to a saving of 10%.

Cleveland Electric is now studying items by groups on which \$10,000 to \$20,000 are spent annually. By analysis of requirements, and careful testing, the purchasing de-

partment was able to cut an annual expenditure of \$18,000 on packaging to \$12,000—a continuing saving.

A change from gasoline to propane gas for torches, heating pots, etc. for soldering work saved between \$10,000 and \$15,000 a year. In addition there were savings in improved safety conditions and lower cost of maintaining equipment.

Replacement of parts on heavy, special equipment is expensive. After thorough investigation it was found that the company could save by building various parts by making a pattern and having the part cast, then machined in outside shops. One of the parts formerly cost \$8,500, plus freight. Made by the new method, it cost \$5,600 without freight costs. Considerable savings have been achieved also by buying replacement bearings from bearing manufacturers, rather than from the suppliers of the original equipment.

After a few years the program is in high gear—and yet its potentialities seem unlimited. A hint of how far it can go is contained in the succinct observation of Mr. Hogg, "Wherever you see a man put a hand to a tool—there's an opportunity for us."



Section of Grading and Trimming Department in typical S.I.A. Member plant. Here cloths are cut to standard dimensions on electrical cutting machines. Buttons, zippers, hooks and eyes, and any other metallic or abrasive substances are removed. Note excellent lighting and housekeeping.

a GOOD WIPER fits the job!

Not only as to size, but in its ability to withstand hard usage; its thorough cleanness and freedom from bacteria; and its capacity to absorb more and to remain absorbent longer. Sanitary Institute Wipers have all these qualifications . . . have acquired them thru 20 years of improvements in processing methods. Use S.I.A. Wipers, and you'll use no others!

The Sanitary Institute of America has a membership of over one hundred leading industrial wiping cloth processors in twenty-seven of the United States. This advertisement is sponsored by the members listed below.

ATLANTA, GA.:
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BIRMINGHAM, ALABAMA:
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American Sanitary Rag Co., 336 W. 37th St. (9)
Chicago Sanitary Rag Co., 2137 S. Loomis St. (8)

DETROIT, MICH.:
Wolf Sanitary Wiping Cloth Co., 515 Wanda St. (20)
Ace Wiping Cloth Co., 7355 Bryden Ave. (10)

DULUTH, MINN.:
Northwestern Wiping Cloth Co., 438 S. Lake Ave. (2)

HOLYOKE, MASS.:
Charles Belsky & Sons, Inc., 532 Main St.

KANSAS CITY, MO.:
Purity Textiles Co. of Kansas City, 4010 E. 31st St. (2)

NEW YORK, N. Y.:
Merel Wiping Material Co., 67 Greene St. (12)

PHILADELPHIA, PA.:
The J. Milton Hagy Waste Works, 4946-50 Parkside Ave. (31)
Keystone Wiper and Supply Co., 1308 No. 3rd St. (22)

PITTSBURGH, PA.:
Armstrong Sanitary Wipers Co., 1233 Spring Garden Ave., N.S. (12)
Scheinman-Neaman Co., 1024 Vickroy St. (19)

SPRINGFIELD, MASS.:
John R. Lyman Co., P. O. Box 623

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Troy Sanitary Wiping Cloth Co., P. O. Box 222

For prices and samples write any above member. For Institute specifications write any member or the Sanitary Institute of America, 105 W. Monroe Street, Chicago 3, Illinois.



THE SANITARY INSTITUTE of AMERICA

REVCO SUB-ZERO CHEST

TO **-95°**
BELOW ZERO

FOR
SHRINK FITS

SEASONING
GAUGES
and
PRECISION
TOOLS

FOR TESTS



Completely equipped ready for operation. The 1.5 Cu. Ft. model as shown handles parts or assembled units up to 23" long, 12½" deep x 9" high and the 6.5 Cu. Ft. model up to 47" lengths, 16" deep x 15" high. Revco Sub-Zero Chests meet highest performance standards featuring temperatures of 95° and 85° below zero while running continuously in normal room temperatures. Other controlled low-temperatures readily attained.

REVCO RIVET COOLER for aircraft application is equipped with 90 rivet canisters in six convenient removable racks. Operates efficiently at temperatures as low as minus 35° F.

WRITE FOR DATA AND PRICES.

REVCO, INC. . . DEERFIELD, MICHIGAN

NEW! Brightboy BL SERIES ABRASIVES



with that
JUST-RIGHT SMOOTH BITE
FOR ALL METALS

One-Operation Bur-
ring, Finishing,
Cleaning, Polishing

Brightboy BL Abrasives fill the increasing demand for rubber-cushioned abrasives particularly made for finishing stainless steel, forged aluminum and other metals. Reason:

THAT JUST-RIGHT SMOOTH BITE—the quality finishing combination of SPECIAL-TEXTURE, CUSHIONING RUBBER and FORMULA-MATCHED ABRASIVE

BRIGHTBOY NOW AVAILABLE IN 6 TEXTURES

54 BL.—For faster finishing action on all metals. TUFF-TEX.—For finishing action on sharp burrs and edges. 70 BL.—Wide range of finishing action on all metals. STANDARD.—General finishing action on all metals. 120 BL.—Wide finishing range on medium-hard and soft metals; high polish on hard metals. FINE-TEX.—Polishing, finishing and burring soft metals; cleaning medium-hard and hard metals.

Time-and-work saving applications hitherto beyond the limits of other finishing methods. ASK YOUR DEALER FOR BROCHURE or write us for it, and on any problem where finishing is involved. BRIGHTBOY INDUS. DIV., WELDON ROBERTS RUBBER CO. 95 No. 13th St. Newark 7, N. J.

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It pays to specify BRISTOL CHARTS

No instrument can be any more accurate than the chart on which it records. To insure the accuracy and readability of your Bristol instrument recordings, be sure you always have an adequate supply of genuine Bristol charts on hand.

We have recently expanded our engineering and production facilities for printing recorder charts for other instrument companies. Circular charts up to 18 inches in diameter and strip charts up to 29½ inches wide can now be produced for all types of special instruments, research instruments, and computers.

Special papers, such as wax coated, heat sensitive, chemically coated, smoke covered, and electrically sensitive papers can be handled on our new equipment.

Our engineering service has also been expanded to help all instrument builders develop charts best suited for their particular needs.

Write for free bulletin describing our complete line of charts. The Bristol Company, 124 Bristol Road, Waterbury 20, Conn.

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LETTERS . . .

CREDIT LINE

Although the lines "What Is a Customer?" quoted in my article "Manufacturer or Distributor" (January issue) reached me anonymously, I have learned from my good friend Charles Cawley, Vice President of Beneficial Loan Corporation, that they are the property of that company. A belated but necessary credit is due BLC for the unexpected "loan".

Frank Curran, Pur. Agt.
S. Blickman, Inc.
Weehawken, N. J.

REBUTTAL

PURCHASING seems to have become a political sounding board. There is a tendency to take left-handed swipes at the departed administration. One wonders where the opposition is. Surely, this is not a good omen for the American scene compounded of competitive forces. Despite the electoral landslide, 27 million persons voted for the party that seems to have become the target of practically every guest writer. Could it be that all purchasing agents are on the same side of the fence?

A recent bit by one of our PA's is typical. The writer entered business well after the depth of a great depression, not caused by government interference, regulation or socialistic ventures. He, as many do, identifies the minimum social justice a God fearing people should practice, with doctrinaire socialism. No allowance is made for the fact that government, as insurance against the threat of dictatorial communism must maintain contact with, and supervise activities at any moment subject to total mobilization. In his plea to return to "personal rights" does he understand that this means also the right to go reasonably fed, clothed, and housed? Though the industry of which he is a part receives millions from the government annually as a subsidy, it presumably is not worth mentioning. In fact, he might well ponder over the assumption that the people did not wish so much to vote in a new political philosophy, as it wanted to vote out an old administration.

The issue here is not what our beliefs might be. What is objectionable is the grinding conformity, the complete absence of the healthy tonic of rebuttal. The unanimity of ideas expressed in editorial material contributed to trade and professional organs bodes ill for the intellectual integrity of our future leadership. The hard core of any doctrinaire "ism" is the "yes man". Should he become nationally typical, we will have become conditioned to the Fuehrer principle of government—and what follows, the concentration camp.

These are my own personal opinions and are in no way to be construed as being those of the management.

Louis D'Hondt, Pur. Agt.
J. W. Greer Company
Cambridge, Mass.

● Our pages are open to the healthy tonic of rebuttal. It should be noted that our guest editorialists are invited not because of their political or economic beliefs, but because of their leadership in the purchasing field, usually evidenced by Association service and office. The topics on which they write are of their own choosing. Presumably they express their personal convictions, as in the case of our correspondent. As to the apparent unanimity of what they feel ought to be said in these editorials, we are reminded of an oft-quoted principle of statistics: "One is an accident, two is a coincidence, and three is a trend."—Ed.

ALL OUT

I should appreciate your sending us copies of the reprints titled "Purchasing Reports to Management" by E. H. Eisenhardt and "Essential Purchasing Records and Forms" by W. H. Herbert. Adrian L. Knox, Vice Pres. Nutone, Inc. Cincinnati, Ohio

● Sorry that we are unable to fill this and a number of other requests for this excellent material from our July 1952 issue. We understand that these articles were listed in a recent reference bibliography, but this was done without authorization to offer reprints. Many requests were received, and to the extent that we were able to do so, we cheerfully provided tear sheets from our file copies of the issue. However, our supply has now been completely exhausted.—Ed.

APPRECIATION

This note is to express my personal appreciation for the article on page 84 of the March issue, regarding the work of our Purchase Survey Office. I am sure that a notice of this kind makes a real contribution to our progress.

Lewis A. Jones
Procurement Division
Hq. Air Materiel Command
Dayton, Ohio

PURCHASING & STANDARDS

I was happy to note the results of your Purchasing Opinion Survey on Standardization (March issue). If reprints are available, I should like very much to have enough to distribute to the members of the N.A.P.A. National Committee on Standardization. In my opinion, the net result of this survey is

that Purchasing has an important place in Standards. Of particular interest was Item 4, reporting that the Purchasing Department actively participates in standardization activities in 50% of the companies, unofficially in 44%, and not at all in 6%. This is an area which may be improved.

E. H. Weaver, Mgr. of Pur.
Union Oil Co. of California
Los Angeles, Cal.

PRINT OR BUY?

We have carefully reviewed your article entitled "Company Cuts Costs 35% with Own Reproduction Department" which appeared in the March issue of PURCHASING. Since a substantial portion of our production is in the general field covered by this article, we were naturally interested in the information which was presented.

In the past we have compared our costs with the costs of printing divisions of large firms. In such comparisons we frequently find that the overhead burden is not charged to these printing divisions. While this may not be the case at Willys-Overland, we have, at times, found ourselves competing with privately owned plants which make little or no provision for rent, power, supervision, etc. Even with this disadvantage, we are frequently able to save our customers a considerable sum of money.

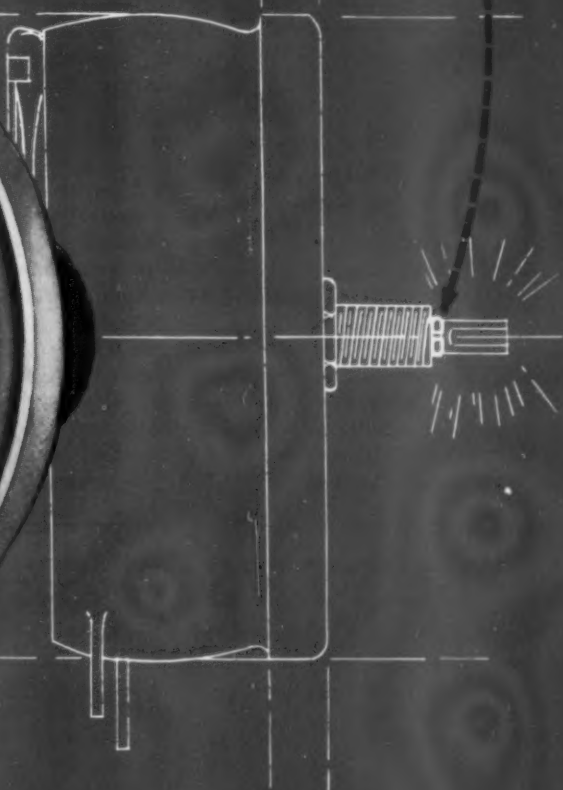
We rather seriously question whether a company can produce large jobs on small equipment as inexpensively as the same jobs can be produced on large press and bindery equipment. We also believe that this same larger equipment has a much better capacity for producing fine quality work.

Perhaps you will be able to present the "printers' viewpoint" in one of your future articles.

R. I. Henkel
The Wallace Press
Chicago, Ill.

● The company-operated printing department, like the company-operated foundry, is a prime example of the eternal problem of "Make or buy?" Obviously, in making any such determination, all factors on both sides—including the factor of realistic costs—should be carefully weighed and balanced. In any equation involving many variables, as in this case, there is no one answer of general application. One company's success story may be another company's downfall. We are glad to present Reader Henkel's well-founded warning, and welcome factual information on both sides of the case.—Ed.

Let a simple retaining ring save metal and money for you!



Retaining rings saved material and assembly time on this finely made rheostat. They continue to save money both for Hardwick Hindle—the manufacturer—and for its customers.

Looking at this application you may say it was obviously a "natural", but there are literally thousands of cases where retaining rings can save as much or more.

Examine *your* machines and products to see where the use of these inexpensive modern artificial shoulders can cut your costs too.

It is needlessly expensive and wasteful to hold a mechanism in place with unnecessarily big shoulders or collars, or to temporize with small cotter pins etc., etc.

Let us show you how these high grade steel rings can do a thoroughly efficient job, saving money for you as well as for your customers.

More and more applications of retaining rings are being made every day.

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MILWAUKEE 2, WISCONSIN, U. S. A.



Staple-Stitching Eliminated On Record Storage Files

A new production process has eliminated staple-stitching on the face of Convoy record storage files, made by Convoy, Inc., Canton, Ohio. The result is a dimple-free, perfectly smooth front that presents a major improvement in appearance and construction.

The files are actually heavy duty corrugated board chemically impregnated to rock-hard strength, manufactured and marketed under the name of "Chem-Board".

1 1 1

New Synthetic Sizing Produces More Durable Papers

The following discussion of a new development in paper sizing, appearing in "For Instance," a publication of American Cyanamid Company, is of interest to industrial users of papers:

Sizing is the trade term for the process of imparting resistance to penetration of paper by ink and other liquids. Two natural materials,

rosin and paraffin wax, are widely used in paper sizes. The size is added to a water slurry of the paper pulp, then fixed in the paper by making the slurry slightly acidic with a material such as alum. The acid condition tends to degrade the paper on aging. Also, a paper sized with rosin is affected by moist alkaline materials wrapped in it. Recently, a synthetic sizing material was developed which can be fixed in the paper under alkaline conditions. This is a significant development because all previous sizes required acidic conditions. The new size eliminates the objectionable acid condition, and produces papers which are more durable, and are applicable to a wider range of uses.

Since paper sized with the new size is scarcely, or not at all affected by alkaline materials, it may be used to wrap moist soap, a condition which would destroy rosin size. The new size has been used successfully with calcium carbonate, which is a filler widely used in printing papers. The papers with the new size have less tendency to curl, and are handled more readily on the printing presses.

It is well known that acids and acidic materials accelerate the corrosion of steel. An interesting use for the new size was developed from the recognition of this fact and its relation to the packing paper used for fine steel instruments. It was found that instruments packed in slightly acidic paper were more susceptible to corrosion than those packed in a neutral paper obtained with the new size. Of course this is a specialized use, but specialties often make good business.

1 1 1

Tauber-Tubes Make Plastic Binding Easy

The Tauber Plastic Binding Kit, made by Tauber Plastics, Inc., New York City, enables anyone to plastic bind any typed or printed sheets in seconds. The kit consists of a plastic and cold rolled steel hand punching machine and over 150 Tauber crack-resistant vinyl plastic binding tubes. The Tauber-Tubes are available in red, white and blue, and a variety of sizes. A Tauber-Tube bound book will lie absolutely flat.

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HELP WANTED

BUYER: Large textile manufacturing chain needs Buyer with five to ten years Purchasing experience, 28 to 33 years of age, college degree. Location in Carolinas. Excellent opportunity. Write full qualifications to Box 1375, Purchasing, 205 East 42nd St., New York, N. Y.

ATTENTION— PURCHASING AGENTS

Send me your inquiries at any time relating to lumber and lumber specialty stock. Will exert every effort to locate the items you request and quote. Write Box 1372, Purchasing, 205 East 42nd St., New York, N. Y.

POSITIONS WANTED

Purchasing Agent, Northern California crushed rock and building materials company desires experienced purchasing agent 30-45. Write full qualifications Box 1363, Purchasing, 205 East 42nd St., New York, N. Y.

Assistant Purchasing Agent. General manufacturing experience in purchasing. Age 25—College Graduate—Energetic. Will relocate. Write Box 1370, Purchasing, 205 East 42nd St., New York, N. Y.

Experienced Industrial Purchasing Agent. Graduate engineer, desires permanent connection with well established progressive firm. Box 1371, Purchasing, 205 East 42nd St., New York, N. Y.

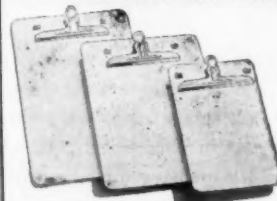
Purchasing Agent or Assistant. 12 years diversified buying plus 10 years Production Department work. Familiar with all phases of Purchasing and Production Management including sub-contracting, expediting and inventory control. Age 44. Locate anywhere. Write Box 1373, Purchasing, 205 E. 42nd St., New York, N. Y.

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